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Medical Lib

Illinois Medical Journal

OWNED AND PUBLISHED BY THE MEDICAL PROFESSION OF ILLINOIS
Office of Publication 155 N. Ridgeland Ave., Oak Park, Illinois

Vol. LXI, No. 2 OAK PARK, ILL., FEBRUARY, 1932 $3.00 a Year

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Entered as Second-Class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1918.

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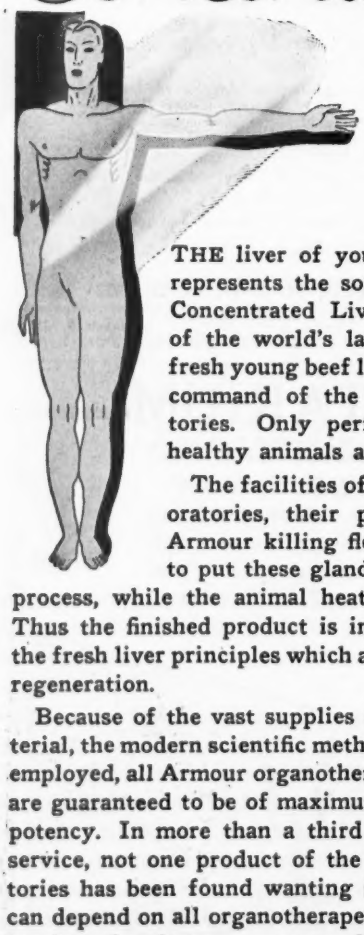

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ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

VOL. LXI | OAK PARK, ILL., FEBRUARY, 1932 | No. 2

ILLINOIS MEDICAL JOURNAL

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $3.50 per year for all foreign countries included in the postal union. Canada, $3.25. Single current copies, 50 cents.

Editorials

THE MEDICAL PROFESSION AND HOSPITALS ARE BEING STUNG TO THE TUNE OF TWENTY-FIVE MILLION DOLLARS ANNUALLY IN CARING FOR VICTIMS OF AUTOMOBILE ACCIDENTS.

Financial interest in community safety extends to every citizen. Apart from accident victims and their families and their affairs, chief economic sufferers from the continuously increasing number of highway casualties are hospitals and physicians. Employers' liability statutes practically eliminate this feature from the bulk of industrial cases. Statistics show a far larger number of automobile and motor bus accidents than industrial accidents. Yet such accidents are covered by no such elaborate system of social protection as makes it possible for physicians and hospitals to receive some return for the care of victims of industrial accidents.

Of emergency and post accident care for highway accident victims hospitals estimate that bills are uncollectable in at least forty per cent. of the cases; or, as in the case of last year's (1931) statistics, a total of $11,500,000 out of the $24,000,000 that United States hospitals estimate was the 1931 bill for hospital care of highway accident cases.

If physicians in private practice generally would compile such a report, undoubtedly the amount would be at least doubled. Hospitals and medical profession of the country are being stung to the tune of 25 millions of dollars annually as the result of emergency treatment given to victims of automobile accidents.

No hospital or physician will refuse to accept and treat emergency patients but to collect after the services given is an entire different matter.

Even when the victim is insured there is no guarantee of payment, as the risk companies are liable only to the premium payer, and it is a matter of unconcern to them whether he meets

his physicians and hospital obligations or not. Unless we intend to play the good samaritan for ever, something will have to be done to remedy the situation and insure payment for emergency medical and hospital services to the victims of automobile accidents.

Hospitals of the United States lose approximately ten million dollars per year because of unpaid bills rendered in highway accident cases, another ten million or more is lost to the medical profession because of automobile accidents.

In the face of this appalling yet veracious picture of economic waste incurred by preventable casualty and personal carelessness comes the National Safety Council with the prophecy that deaths from automobile accident in 1932 will probably proceed steadily along the rate of increase for the past few years. In 1920, deaths from motor accidents were only 12,500, or about 12 deaths per thousand, and this rate now stands at about 27 persons per thousand. In 1929 the death toll from this cause was 31,000; in 1930, 33,000, and in 1931, it ranged between 33,000 and 34,000. In this ten year period there have been at least 8,500,000 disabilities and injuries from motor accidents.

The highway or motor accident is an emergency case. As such it is received in a hospital or cared for by a private physician without stipulated fee or financial duress. More frequently than not this emergency care demands a hospital stay of from a day to months. Most frequently the patient taken unaware finds himself or herself in somewhat straitened financial circumstances and either at the mercy of an unscrupulous responsibility shirking driver or in the hands, sauve and slippery of a claim beating insurance company. The hospital will save his life and will do the job thoroughly if it can be done with x-rays, laboratory work, service of all sorts, shelter, food, laundry, care, and staff medical service. Or if the patient is not hospitalized some private practitioner takes charge and sees the man through.

But more than one doctor finds himself forgotten if the patient recovers and very much out of luck and out of pocket if the patient dies. More than one hospital has seen a patient who has been well served and tended walk out carelessly enough with bill unpaid, and insurance damages in his pocket.

In defense of the patient—before we get down to facts and figures showing how physicians and hospitals are annually mulcted out of millions of dollars through unpaid bills for emergency cases—let it be said that so great is the average patient's need for ready money that only too often he settles for an inadequate amount in a "friendly settlement." It is only a small proportion of accident victims who can afford to play the waiting game of litigation. Expecting to make a settlement with person or the organization responsible for the accident he naturally plans to pay hospital and doctor when this settlement is made. To his sorrow he soon finds that the case has gone to an insurance company for an "adjustment." It is surprising to the accident victim to discover how little the insurance company thinks in dollars and cents of his injured back or leg or head. He discovers that to get anything at all he is going to need a lawyer. Of course, the lawyer will have to be the first bill paid when a settlement is arrived at eventually, for the excellent reason that the lawyer is there on the job; has been on the job since the fact became evident that to come to any terms a suit will be necessary, and that this suit must wait its turn through the interminable mazes of an overcrowded court calendar and the delays and vexations that can arise.

Warned by the experience of others it is only natural that the accident victim shall "take the cash and let the justice go" no matter how small an amount he must accept.

Naturally, too, the average emergency patient feels that the man who hurt him should pay for the mending. He is correct in his belief. But he should realize that the hospital can make its charge for services only to those who receive them. And this holds true of the physician.

Now the bald facts are that in the end the private physician and the hospital lose about $25,000,000 annually through the direct carelessness and personal irresponsibility of the persons who cause highway accidents. Unpaid hospital bills in highway accident cases are for the most part so definite a drain upon the resources of a hospital that these have become a recognized though an unjust item in the economic problem termed by the lay public "the high cost of hospitalization."

To make hospitals and doctors the scapegoat is a crying shame. Either more drastic and

penalizing legislation fixing the rehabilitation expense for the victim of the highway accident directly upon those who have caused the injuries, and in such a way that this liability shall be unquestioned, or some definite policy for reimbursement from other sources and without added burden to the taxpayer should be devised in some equitable and competent manner. The community sooner or later has its hands full in the after care of the victims of these accidents and their families, in those instances where the disability is such as to prevent anything but partial return to the former skill as a wage earner with the resultant breaking up of homes, and increase of state dependents and semi-dependents.

In the year 1932 it is expected that at least two million persons will require emergency and after care in hospitals as a result of highway accidents with motor cars the responsible factor.

There are approximately 35,000 deaths per year in this country from automobile accidents. Also from this cause there are about 35 injured for each death recorded or a total of 2,225,000 injured. Many of these injured, of course, are not brought to hospitals.

Care of highway accident cases looms large in the total hospital service. Records of ten general hospitals selected at random show that *4.3 per cent. of all the patients treated during the year 1929 were highway accident cases and that 5.4 per cent. of the total patient days served went to the care of victims of highway accidents.*

In a number of hospitals, highway accident cases constitute a *larger* number of patients and patient days than the average for the group of hospitals indicates. In one hospital 8.1 per cent. of all patients were highway accident cases. In two others the percentages of highway accident cases were 16.5 and 16.6 per cent. of the total number, respectively. Considering patient days three hospitals recorded between 7 and 8 per cent. of their total patient days as having been rendered to highway accident cases.

Accident patients do not pay for the medical and hospital care received and are charity patients so the physicians and hospitals are penalized to the extent to which these patients are not paying for their care.

The hospital is the natural and first refuge for the victims of public highway accidents. Immediate medical and surgical aid is required and is given without hesitation. Dressings and other supplies are used, x-ray examinations are made, operations are performed, nursing care and maintenance are provided and everything is done to rehabilitate the victim of the accident.

Doctors are not mercenary and hospitals are not grasping institutions. Rarely do they question the victim's finances when life hangs in the balance, but they are confronted with the inevitable problem of making ends meet. Many of them have had the experience of a patient walking out without paying the physician's or hospital bills after collecting from the insurance company.

The National Safety Council experience indicates that there is an average of 35 accidents for every fatality.

Quoting Matthew O. Foley, *Hospital Management,* July, 1931: "In 1930, according to one very conservative estimate, the total cost of automobile accidents (exclusive of a valuation of lives lost) in the United States was $853,400,000. Hospital authorities say that approximately 12,500,000 patients are cared for in the hospitals in the United States in a year. If each patient stayed fourteen days and cost the hospital $5.00 a day, the total cost for 12,500,000 patients for 14 days would be $875,000,000.

This is approximately the same amount as is represented by a minimum estimate of cost of automobile accidents.

That the medical profession and hospitals are mulcted out of the money they are entitled to and should receive in accident cases is shown from the following.

Dr. Sidney G. Davidson in *Hospital Management,* May, 1929, says:

"The New Jersey commission appointed to study State and County aid to general hospitals in that part of the report dealing with automobile accidents showed that of the 19 hospitals studied there was a loss of $46,850 on a total bill of $106,000 or 44 per cent. for this type of patient.

Ridiculous when we think of the machinery set up for workman's compensation and then realize that there are more automobile accidents than industrial accidents and no effort made to correct this condition."

AUTO ACCIDENTS WORRY HOSPITALS

One item of the nation's automobile accident bill is the $11,500,000 which hospitals are un-

able to collect for service to victims of automobile accidents.

Hospital deficits, which exists because of free service to the indigent and poor, are swelled to large proportions by unpaid accident and liability patients.

With approximately 2,000,000 automobile accidents a year the demand on hospitals and doctors from this source are, today, at least, greater than for service to injured industrial workers.

The Ohio hospital association recently released figures showing that in that state the average cost of automobile accident patients was $5.54 per patient day. Slightly less than 50 per cent. of this cost was collected by the hospital.

The report further showed that if the accidents were evenly distributed throughout the state of Ohio 95 per cent. of the bed capacity of the institutions would be utilized solely for the care of automobile accident victims for a period of 12.6 days. This service would cost each hospital a total of $69.80 per automobile accident victim cared for, of which cost $36.30 would have to be provided by the hospital from some other source than from the patient or his friends. The average collection per patient would be $33.50.

Some plan of ways and means should be devised so that the community other than the hospital and the physician shall carry the economic hazard of highway accident.

If about 45 per cent. of these cases must be regarded as charity patients, if the dependent and those who never pay bills could be recognized at times of the accident then the natural place for them would seem to be the charity community hospital, either township, municipal or county as the conditions maintain. Since the nature of emergency service as well as the customarily overcrowded content of free hospitals ordinarily inhibits the care or assignment of the average highway accident to such institutions no blanket ruling to rush the injured to such places would adequately meet the situation to say nothing of the loss of life or impairment of rehabilitation possibilities that might ensue, irrespective of the victim's capacity and in most instances unwillingness to pay in 50 per cent. of the cases and his antagonism to a publicly supported institution, which ability, of course, it is impossible as well as inhumanitarian for any hospital to pass upon at the time the emergency treatment is demanded.

Of course, the utopian and millennial method of handling this unfortunate situation that so unjustly increases the economic burden of highway accident upon the shoulders of hospitals and doctors would be a form of insurance protecting them.

THE OLD SHEPPARD-TOWNER MATERNITY ACT IS REVIVED. BILL H. R. 7525

The old expired Sheppard-Towner Maternity Act is revived. It was reported from house committee and is due for prompt passage. It is known as (H. R. 7525).

It is designed to continue the work begun under the Sheppard-Towner Act, which by statutory limitation expired in 1929.

No hearing was given. H. R. 7525 was introduced January 12 and favorably reported by committee on Interstate and Foreign Commerce to the House on the next day, January 13.

It bribes States into State Medicine. It brings them under Federal submission. It puts a woman in as administrator.

By expiration of the old Sheppard-Towner Act, the women politicians, lobbyists and social job hunters lost its million dollars a year in salaries and travel.

One million is a big prize worth their increased efforts to regain; but State Medicine destroys, and America cannot afford to follow in the paths that led to the undoing of medicine in Russia.

The new bill has all the quackeries, trickeries and glass beads of the original pig-in-a-poke that was wished upon a gullible citizenry, and that failed to effect any discoverable reduction in maternal and infant mortality rates though it did reduce the surplus of the tax payers' purses.

The new bill is open to every objection ever raised against the original Sheppard-Towner Act. It seeks to subject intrastate health activities of the several states to federal supervision and control. It proposes to provide for all time, federal subsidies for states willing to subject their activities in the field of maternal and infant hygiene to the supervision of the Children's Bureau and above all it seeks to perpetuate the

Sheppard-Towner Act, that is not only a useless piece of legislation but one for which perpetuation is absolutely illogical.

Proponents of this legislation insisted that it would reduce what they contended was an excessively high infant and mortality rate in the United States. So they cannot complain now if mortality rates are used as a measure for the lack of success of the Sheppard-Towner Act's functioning, and its efficiency in operation.

If the act failed—as it did—to reduce such mortality rates then what excuse can be given for its resurrection and perpetuation?

The truth of the matter woud seem to be that the same reason exists for the perpetuation of Sheppard-Townerism as caused its inception, and not a pretty reason at that.

Reduced to its basic elements and exposed to the searchlight of truth Sheppard-Townerism, was, is and always will be a direct and menacing piece of socialistic legislation that neither feeds, shelters or relieves mothers or infants nor in any wise bears upon maternity relief other than to increase taxation for the purpose of delivering obstetrics more or less into lay hands and providing an increased number of good jobs for political appointees, not licensed physicians, either.

Represented by its backers and sponsors as a temporary measure to get each state interested in providing adequately for the welfare and hygiene of mothers in its own territory, now through the Jones-Cooper Act we seem about to have Sheppard-Townerism ad infinitum, ad libitum and ad nauseam. Personally we cannot see any reason at all for this perpetuation into a permanency of a measure that had been foisted upon us as an emergency relief. Also let it be noted that as soon as the Sheppard-Towner Act had expired a number of states increased their maternity appropriations, a thing they had not done during the life of the Federal Act. As soon as the Sheppard-Towner Act had expired fifteen states and the Territory of Hawaii made appropriations from their own treasuries and went about their own business at a rate that they had never done while depending upon the federal government for support. Instead of stimulating the separate states to make maternal appropriations the federal appropriations had the same effect as money from home. Continued federal subsidies will make a "remittance man" out of any state.

When thrown on their own resources the states that wanted maternity legislation and maternity benefits managed to find the money to care for this work. Sheppard-Townerism failed both to reduce maternity and infant mortality and to increase state appropriations for its upkeep.

From every angle Sheppard-Townerism would seem to have flopped. It did not reduce mortality rates, it did increase taxation, and as a stimulant to state appropriation it had no effect.

How then can its revival and its perpetuation in either H. R. 7525 the Jones-Cooper, Sheppard-Towner or in any other form have any justification?

DOCTORS SHOULD WRITE TO ALL MEMBERS OF CONGRESS FROM ILLINOIS, PROTESTING AGAINST THE PASSAGE OF H. R. 7525. THIS WILL HAVE AN IMMEDIATE INFLUENCE WITH CONGRESSMEN OF OTHER STATES

Act today. Tomorrow may be too late.

Send your communications directly to the members at Washington, D. C., care of Senate or House of Representatives. The following is the personnel from Illinois of the House and Senate:

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A RECAPITULATION OF THE SHEPPARD-TOWNER ACT MAY NOT BE AMISS

A bad penny turns up with all the persistency of a good man, or the annual tax bills. Which is perhaps one of the reasons why we have with us again our old enemy, at once the menace of medicine, of democracy and of true public welfare—the iniquitous Sheppard-Towner bill.

During the seven and one-half years that the Sheppard-Towner Act was in force it cost the nation about $11,000,000 in taxes, and was barren of results. This should be warning enough to a country staggering now under more taxes and especially under more unnecessary levies than precipitated revolution in France.

For the few who may be remiss as to the real status of the "Sheppard-Towner Act" in its reaction upon taxpayer and physician a brief recapitulation may not be amiss.

Concisely speaking not only does the Sheppard-Towner Maternity and Infancy Act, no matter in what guise it appears, admit state medicine into the United States and pave the way for communism; aid in turning the country into a bureaucracy and add taxes and yet more taxes upon a citizenry unable to pay even present levies, but it makes for federalization of national health and hygiene.

Now the Sheppard-Towner Maternity and Infancy Act became a law, Nov. 23, 1921. Adroitly framed, so as almost wholly to preclude the possibility of a review by the United States Supreme Court, this Act authorized the Children's Bureau in the Department of Labor to enter into agreements or compacts with such states as were willing to surrender to the federal government for monetary considerations their rights to supervise and control maternal and child hygiene. People of every state had to contribute their shares of the general fund through federal taxation. They could get none of their money back unless their state governments submitted to federal domination. So this scheme succeeded politically in that it provided for setting up an elaborate federal machine and for keeping it in operation. On June 30, 1929, by express repeal, Congress killed the Act.

It is not of record or of experience that the $11,000,000 in taxes paid by the U. S. citizenry in support of the Sheppard-Towner Act resulted in the development of a single new idea in the field of maternal and infant hygiene. Official mortality statistics reveal that not even by a fraction of a point per annum did this Act speed up the rate of decline in either infant or maternal mortality. Taken in any way the Sheppard-Towner Act was a failure. It fell down as an experiment federal administration of state affairs. What price Americanism? It fell down even harder as an experiment in infantile and maternal hygiene.

Yet this purposed revival of the Sheppard-Towner Act—albeit 'twill be but "a rose by yet another name," calls for the same old poison dressed up in another shirt. For the new plan is to make this rejuvenated Sheppard-Townerism go further and fare even better. The general taxpayer will bear the traffic aided by the medical profession. Newfangled Sheppard-Townerism will cover the entire field of hygiene for all classes of the population in all rural areas; and become a permanent part of our scheme of government. Popular demand for retrenchment in the cost of government and the desire that the federal government cease its activities in fields that belong exclusively to the states fails to influence proponents of Sheppard-Townerism. That the most patriotic duty at present is to refrain from seeking any increase in the drain on public finance is of no moment to those political jobberyists, those purblinded self seekers to whom the essence of living resolves itself into a soft job, a fat pay envelope, self-sufficiency and the world well lost.

Let it be stated authoritatively that according to President Hoover's message, page 215 Congressional Record, date of Dec. 9, 1931, three bills have already been introduced in Congress authorizing federal subsidies under the Sheppard-Towner plan. *One bill, H. R. 7525, introduced by Representative Bankhead of Alabama, has already been recommended by the Committee on Interstate and Foreign Commerce of the House of Representatives for enactment and is now on the House calendar.* Another bill of similar purport, S. 572, introduced by Senator Jones of Washington, the Senate Committee on Commerce gives a hearing February 4. These bills provide, each one of them, *for annual ap-*

propriations to enable the federal government to make to subservient states certain basic grants of money. Such amounts are arbitrarily fixed by the bills. *The government is to pay to each such state in addition a subsidy or dole equal to the amount that the state appropriates for the purposes of the bill. The amount of the allotted federal subsidy or dole that a state may receive for rural, maternal or child hygiene is to have no reference whatever to rural, maternal or infant death rates.* Neither is that amount to have any relation to the financial needs of the states. Funds collected by taxation that will be levied on *the people of rural and urban* areas alike will be used exclusively for *the benefit of the people in the rural* areas, except that money for maternal and child hygiene may be spent for the benefit of mothers and children in towns and cities having not more than fifty thousand inhabitants. These combined federal and state funds will be used for rural hygiene, or for maternal and infant hygiene, or for both, as the state elects, but only in accordance with such state-made plans as a federal board finds acceptable.

Consider, also, another beautiful angle of this exquisite communistic plan fed by exorbitant taxes from men who can hardly make both ends meet, in 50 per cent of instances let alone pay for their own medical and general maintenance.

From the judgment of that federal maternity board there will be no appeal. The board, which is to be an addition to innumerable other federal boards and commissions, will be made up of the chief of the Children's Bureau in the Department of Labor, and the chief of the Bureau of Education in the Department of Commerce, both of whom are laymen, and *only* one physician, the Surgeon General of the United States Public Health Service. The taxpayer will pay as best he can the increased cost of the federal government proposed by each of these two acts to the tune of two million dollars for the first year.

This amount is to be gradually increased until 1937, when the annual appropriations will aggregate *four million two hundred and fifty thousand dollars,* at which figure they will continue indefinitely.

Physicians are particularly interested in the effect on local health administration by such efforts to federalize the health administrations of our states. If successful such activities will exaggerate health activities in rural districts, and particularly health activities for mothers and children, at the expense of health activities in urban districts and in fields other than those of maternal and infant hygiene. Further they will tend to destroy a local sense of responsibility for health activities. Many states did not appropriate for maternal and infant hygiene up to their full financial ability until after the repeal of the Sheppard-Towner Act. Federal aid has a deadening effect on state initiative—it is only human nature. As citizens, physicians are interested with all others in the effect of proposed legislation to increase cost of government and to break down constitutional lines of demarcation between federal and state jurisdictions. Danger of federal intrusion into state administration was forcibly pointed out by the President's National Advisory Commission on Education, when it reported:

"The apparent danger that lurks in all our more recent attempts to inject the federal government into education in the local communities is that it has not always nor even generally manifested that tender regard for local modes of management which has characterized state and county cooperations with local schools. Federal agencies frequently tend to set up modes of management highly centralist in spirit and effect, wherever they have tried to work in cooperation with state-wide agencies and local boards. Their right to approve and to reject plans submitted by the states, involving details of both administration and instruction, is not in harmony with the indigenous American spirit of local and decentralized management which has always yielded certain and good results given adequate time. It is the spirit of local self-governemnt native to the American people which dominates most of our educational affairs in the forty-eight states. The centralist attitude, already apparent where the federal government touches education in the states, is felt to be contradictory to our normal ways of conducting educational affairs, and hence arouses popular distrust."—Report of the National Advisory Committee on Education, on Federal Relations to Education, Part 1, Washington, 1931, pp. 19-20.

"The matching of federal money grants, with state or local funds whether their use is for general or special educational purposes is a policy

not to be favored in the field of education."—Ibid., p. 33.

Federal subsidies for health activities fall naturally into the same category with federal subsidies for educational or for any other purposes.

Now in the proceedings of the American Medical Association under date of May, 1922, and again under date of June, 1930, this great organization *condemned federal interference through subsidies with the orderly administration of state hygiene* such as is contemplated by the pending legislation. Disruptive of local integrity in the field of health administration, such methods have been tried and failed. Insidiously they tend to bring medical activities in the states under the supervision and control of federal authorities. State, county and other medical associations and individual physicians should at once send letters and telegrams protesting against the enactment of the pending legislation that has been described, to their Senators and Representatives in Washington. Protest against such legislation should be made to the committees before which it is pending. To speak and vote against it when it comes to the Senate or to the House for action should be their promise since it is their patent duty to the men and the women who have sent them to Washington and who place in these representatives trust and who have a right, legal and vested, to expect understanding and protection.

SUBSTITUTING POLITICIANS FOR PHYSICIANS IN THE CARE OF MATERNITY AND INFANCY

When the real mothers of this country realize the whole truth about the maternity business organized by feminists and socialists who propose to substitute politicians for physicians in the care of maternity and infancy, they will arise in their might and sweep the country clean of political accoucheurs, tight rop walkers, political milkmaids and insist that the best is none too good for American mothers and babies, and refuse to tolerate longer the attempted socialization of the practice of medicine, pediatrics, obstetrics and general care of the sick in a country where even the nationalization of railroads, coal mines and water power is not dared by the same political leaders who tamely submit, against their own better judgment, to federal bills and proposed constitutional amendments to place the lives and health, labor and education of all mothers, children and youth under control of one radical lay bureaucrat at Washington, who is neither doctor, lawyer, mother nor nurse!

IRVING PARK BRANCH OF THE CHICAGO MEDICAL SOCIETY WILL GIVE MEDICAL SERVICE TO THE DESERVING POOR

At the November meeting of the Irving Park Branch of the Chicago Medical Society there was discussed ways and means of combating the effects of lay control of a free clinic functioning in the Irving branch district.

A resolution covering many phases of medical clinics operating in Chicago and adopted by the Northwest branch of the Chicago Medical Society as well as a letter received by one of the physicians in the Irving branch from an official of the tentative free clinic was read. Both the letter and the resolution provoked much argument. A committee was appointed with full power to act in behalf of the society and to devise means of forestalling the activities of the lay clinic.

The committee held several meetings. Finally it was decided that an efficient way to combat the clinic menace is for the doctors of the branch to start a clinic themselves under the auspices of organized medicine as represented by the branch society.

A branch clinic headquarters is established at 3976 Avondale avenue. A letter and return postal was sent to all members of the branch society asking each member to signify willingness to cooperate with the plan agreed upon. Seventy-five doctors promptly signed up to co-operate.

This plan provides for a doctor to be in attendance each forenoon. The clinic physician is to render such service as is possible at headquarters. Should the case require further treatment reference is made to his family physician. In case there is no family physician the patient is redirected to the clinic for further treatment.

There is a social worker in daily attendance to investigate all applicants for free service.

Arrangements were made with the druggists of the Irving Park branch. The Chicago Retail Druggist Association agrees to furnish medicine at cost where the patient is unable to pay.

These druggists were instructed to send bills to the officers of the Irving Park branch who have agreed to reimburse the druggist.

Dentists of the Northwest Side branch are co-operating with the doctors of this section of the city.

The Central Registry for Nurses co-operates to the extent of sending out a nurse each day gratis.

The branch is divided into sections. Doctors listed in each division are to take care of house calls providing the patient has no regular physician. The question of hospitalization has been taken care of. All the hospitals in the district have agreed to co-operate.

COUNTY MEDICAL SOCIETIES CAN CONDUCT THEIR OWN CRIPPLED CHILDREN'S CLINICS

For a number of years, many Lay Organizations desiring to do some philanthropic health work, have sponsored the conducting of Crippled Children's Clinics in many parts of the Country, and in Illinois particularly. It is quite evident that any form of clinics not directly under supervision of the Medical Profession cannot be the factor for good in the community, that they should be to serve the proper interests satisfactorily.

We believe that practical tests over a period of years are sufficient to convince the most sanguine, that Medical Societies in any Community can conduct their own Clinics, giving the best possible service available to those needing it. The Warren County (Illinois) Medical Society, is just starting its sixth year of Crippled Children's Clinics, and the plan of operation of this successful clinic, is worthy of the attention of other Societies.

The clinic is held regularly, at the City Hospital in Monmouth. All of the Hospital authorities are interested in the welfare of this community, and cooperate thoroughly with the local Medical Society to see that there is no lost time, and no overlapping of effort in arranging, and conducting the clinics.

All patients are received at the Hospital, entered properly on the records, and given a number, which is not changed in succeeding clinics. The records are kept in cumulative form, each patient's records being kept in the files in a separate folder. This folder contains the history of the case, a report of the original examination, and the recommendations of the clinician. At succeeding clinics, these records are ready for the clinician, with a report of the follow-up services, and eventually, a complete record of the case as seen at subsequent clinics, is a part of this cumulative record. One copy of the record is given to the family physician of each case, one copy retained on file at the hospital, and a third copy is given to the visiting nurses. Two nurses, a County nurse, and Welfare Nurse a few days following each clinic, call at the home of the patients, to be sure that the instructions given, were understood, and later, carried out. This is a most important feature of this routine. The Warren County Medical Society has used the same clinician for all of these clinics, and with the system which has been gradually established, it is possible to see twice as many patients now, in a day, as were seen in the earlier clinics. The family physician of each case is urged to be present, and hear the advice given to the parents, so that they will be able to give a thorough cooperation, for the best interests of the patient.

It is not difficult to convince the people of the community, that all clinics should be conducted entirely under the supervision of medically trained people, in order that they may receive the maximum benefit. How can the necessary financial assistance for clinics of this sort be arranged? For several years, it has been the custom in Warren County, for a local Lodge to sponsor "The Annual Charity Ball," the receipts to be used for the crippled children's work. Sufficient funds have been received to more than pay all expenses, and give a decent working fund for future use.

What has been done in Warren County, through the efforts of the local County Medical Society, can likewise be done in other counties in Illinois. It is our opinion that all other clinics can be arranged along similar lines, so that it will not be necessary for any Lay Organization in Illinois to assume leadership in the conduct of any type of clinics in the near future.

THE DEPRESSION HAS INCREASED THE FINANCIAL BURDENS OF HOSPITALS

The depression, instead of making it possible for hospitals to reduce their rates, has increased their financial burden, members of the Chicago

Hospital association held at its January meeting in Chicago. They explained that while the Cook County hospital and charity wards have been overcrowded during the last year, the so-called private hospitals have had their beds only 58 per cent occupied, due to inability of patients to pay for hospitalization.

A reduction of rates is impossible, the representatives present held. Some of them pointed out that in providing increased services at no increase in rates the hospitals have in effect reduced rates during the last ten years.

The association passed a resolution in support of the American Hospital association's plan for cooperating with veterans' organizations for convenient hospitalization of world war veterans at low cost.

ACTIVITIES OF THE WOMAN'S AUXILIARY, ILLINOIS STATE MEDICAL SOCIETY

Randolph County—Mrs. C. O. Boynton, President of Randolph County Auxiliary and also Councillor for the 10th District is an outstanding leader in auxiliary activities. This County Auxiliary hold their meetings in conjunction with the Medical Society, in the various cities.

The October meeting was held in Sparta, home of Dr. and Mrs. C. O. Boynton, with Dr. J. Curtis Lyter of St. Louis the guest speaker on "Diagnosis and Treatment of Diseases of the Heart."

December meeting went to Chester, when Dr. Lischer of Mascoutah, Ill., gave his famous address—"The Country Doctor." Steeleville will entertain the auxiliary in February, when legislative program study will be resumed.

St. Clair County—This County auxiliary is one of the youngest in the State, yet they report excellent progress, and now have a membership of 50. Thirty-two members attended meeting January 7th at East St. Louis, with Mrs. James J. Dunahue as the principal speaker. She selected her subjects from articles appearing in Hygeia, i. e., "Colds," "Mischievous Children" and "New Noses for Old."

Sangamon County—Interesting and instructive meetings is the keynote of this County's programs. Here are a few examples:

Oct. 16—"What a Doctor's Wife Can Do to Help Her Husband," by Dr. Lena K. Sadler, Chicago.

Nov. 20—"An Interpretation of Medical Ethics—The Doctor, How Did He Get That Way—Why the Doctor Does Not Behave Like a Human Being." This was interestingly and humorously presented by Dr. James P. Simonds, Northwestern University."

Jan. 15.—"Health Insurance," by Mr. A. M. Simons, Professor of Economics, Chicago.

March—"A Layman's Interpretation of the Medical Profession in Community Health Work."

Mrs. David H. McCarthy of Springfield reports that the local auxiliary is working with the State Officers to make interesting and pleasant plans for their guests during the Illinois State Medical Society Convention this year in Springfield.

Cook County—A decisive move to put "Hygeia" before the public has been inaugurated in this County (Chicago Central Branch). A fund has been subscribed from the treasury to finance yearly subscriptions, to be placed in the most strategic points, in public places (Libraries, Reading Rooms, etc.) where interest may be stimulated. Jointly with the placing of this magazine, two articles by Dr. Andrew C. Ivy will be placed, "On Animal Experimentation" and "What Science Has Done for the Dog," thus endeavoring to combat spreading mis-information.

Each month a lecturer of note has been their guest speaker. During 1931-32 they were fortunate in having the following:

Dr. John R. Harger, President Chicago Medical Society, on "Problems of the Auxiliary."

Dr. Arthur J. Cramp, "Pink Pills for Pale People."

Dr. George B. Lake, "Mental Health."

Dr. Andrew C. Ivy, "Animal Experimentation."

Coles-Cumberland Counties—Our President, Mrs. T. O. Freeman, is hard at work in her own local auxiliary. On October 16, 1931, she entertained the Coles-Cumberland County Medical Society and Auxiliary at her home in Mattoon. Dr. G. B. Dudley of Charleston gave an interesting talk on auxiliary and medical society work, followed by musical numbers and travelogue.

Business meeting of Coles-Cumberland Auxiliary was held on January 7, 1932, at Charleston,

at which time the officers for 1932 were elected as follows: Mrs. G. B. Dudley, Mrs. C. D. Swickard, Vice President; Mrs. E. E. Richardson, Secretary, and Mrs. W. R. Rhodes, Treasurer. Mrs. N. C. Iknayan presented program.

Vermilion County—This County auxiliary holds meetings each month having a variety of programs, i. e., Christmas party, illustrated lecture on Elephant Hunt, and for February Dr. W. E. McGavren will relate his experiences as a Medical Missionary in India.

Newly elected officers for Vermilion County are: Mrs. B. M. Jewell, President; Mrs. R. E. Montfort, Vice President; Mesdames A. E. Sistler, O. Michael, Warren Smith, Solomon Jones, E. G. Williams.

The State Program Chairman, Mrs. N. C. Iknayan, Charleston, Ill., has sent out to all county auxiliaries a symposium on articles which have appeared recently in current magazines with the suggestion that these subjects be read by the auxiliary membership. This is a very fine suggestion for monthly programs and has the endorsement and approval of our State President, Mrs. T. O. Freeman.

Special attention is called to the December, 1931, issue of the American Medical Association Bulletin, pages 234, 35, 36, 37, listing activities of various auxiliaries throughout the United States.

The Woman's Auxiliary, Illinois State Medical Society, held a meeting of the Board of Directors in Chicago, January 26, 1932, at the Medical and Dental Arts Club.

MAKE HOTEL RESERVATIONS EARLY—ANNUAL MEETING

Springfield is pleasurably awaiting the meeting of the Illinois Medical Society on May 17, 18, 19, 1932. Springfield is a city of national historical interest, which every Illinoisan and American should give at least one appreciative visit, and May is a delightful month in which to do this.

Hotel reservations should be made as soon as possible to avoid a last minute rush. Rooms can be had at varying prices, from the de luxe accommodations of the larger hotels, to those of the smaller, quieter, and less expensive hostelries. There is ample space for all and every purse can be suited.

The Committee on Hotel Accommodations will gladly co-operate in any way possible to make your Medical Week a success and pleasure.

It is keenly hoped that members will bring their wives and families along. The women of the Auxiliary of the Medical Society are planning a hearty welcome for the ladies and will exert themselves in every way to make this visit one to be remembered.

The Sangamon County Medical Society and their Ladies' Auxiliary also join in sending an urgent invitation to you, Dr. and Mrs. Physician, to come to Springfield for this Medical Meeting, on May 17, 18, 19, 1932, to visit us and to visit our town, the home of Abraham Lincoln, and the Capitol of your State.

Send your reservations direct to the hotels.

HOTEL RATES

Abraham Lincoln Hotel...	150 rooms	$3.00 to $7.00
St. Nicholas Hotel	350 rooms	2.00 to 6.00
New Leland Hotel	150 rooms	1.75 to 7.00
Illinois Hotel	60 rooms	1.25 to 2.50

There are other hotels, which are smaller but comfortable.

GOLF TOURNAMENT AT ANNUAL MEETING

"There will be a golf tournament at the annual meeting for interested doctors on Tuesday morning, May 17, 932. We would like to have every county represented in the tournament. County Secretaries or individual golfers may write to Dr. F. P. Cowdin, Chairman, Golf Tournament Committee, 320½ South Fifth St., Springfield."

TWO NEW COMPONENT COUNTY SOCIETIES HAVE BEEN ORGANIZED

The Hardin County Medical Society has been organized with the following officers:

President—L. D. Dusch, Golconda.

Vice-President, J. O. Hart, Elizabethtown.

Secretary-Treasurer—J. R. DeVelling, Rosiclare.

This Society has not previously been organiz- and they have seven charter members and hope to hape one or two more within a short time.

KNOX COUNTY MEDICAL SOCIETY REORGANIZED

The Knox County Medical Society was reorganized on January 8, 1932, after their petition for a charter was approved by the Council on January 6. The physicians of Knox County having submitted all data required by the Council in due form has received on this date, January 18, 1932, a charter as a component society of the Illinois State Medical Society. The new Knox County Medical Society has a charter membership of 42. We have therefore added two component societies to the list of county medical societies in Illinois.

Dr. C. S. Bower was elected President; Dr. George E. Maley, Vice-president and Dr. Louis N. Tate, Secretary.

CHICAGO MEDICAL SOCIETY DISAPPROVES OF ANY DIRECT OR INDIRECT ASSOCIATION OF ITS MEMBERS WITH ANY PERSON, FIRM OR CORPORATION, ENGAGED IN THE ILLEGAL PRACTICE OF MEDICINE.

At the meeting of the council of the Chicago Medical Society, January 12, 1932, the following resolution introduced by Dr. G. W. Post was adopted:

WHEREAS, Section two of the Medical Practice Act of Illinois declares "No person shall practice medicine or any of its branches, or midwifery, or any system or method of treating human ailments without the use of drugs or medicines and without operative surgery, without a valid, existing license so to do."

Section Three: No person except as otherwise provided in this Act, shall hereafter receive such a license unless he shall pass an examination of his qualifications therefor, and

WHEREAS, Section Sixteen provides that the license of a physician may be revoked or suspended for a number of reasons, among which one designated as No. 10 declares professional connection or association with, or lending one's name to another for the illegal practice by another of the treatment of human ailments as a business, or professional connection or association with any person, firm or corporation, holding himself, themselves, or itself out in any manner contrary to this Act," and

WHEREAS, Section Four of Chapter Two of the Principles of Medical Ethics declares: "Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional," and

WHEREAS, Section Six of Chapter Four declares: "It is unprofessional for a physician to assist unqualified persons to evade legal restrictions governing the practice of medicine," and

WHEREAS, it appears from the foregoing from the Medical Practice Act of Illinois and from the Principles of Medical Ethics that a corporation cannot engage legally in the treatment of human ailments, and that it is highly improper for a physician to associate himself with any corporation in the practice of medicine as a business.

THEREFORE BE IT RESOLVED, that the Council of the Chicago Medical Society hereby announces and declares that it does not now approve nor has it ever given its approval to any direct or indirect association of its members with any person, firm, or corporation, engaged in the illegal practice of medicine, and

BE IT FURTHER RESOLVED, that no action of the Council can rightfully be interpreted by anyone as appearing to give such approval, and

BE IT FURTHER RESOLVED, that any member of the Chicago Medical Society who may directly or indirectly lend encouragement to or permit the use of his name in connection with any form of illegal practice of medicine, does so at his own peril.

MEDICAL SERVICE ON INSTALMENTS

Dr. George B. Lake, managing editor of *Clinical Medicine & Surgery,* in a recent issue makes comment on the economic problem paying for medical service as follows:

Whether one thinks it is a good thing or not, the installment system of buying (euphemistically known as "purchasing out of income") seems to be, not merely here to stay, but growing steadily and rapidly.

When the manufacturers of more or less expensive luxuries and near-luxuries found that their capacity for production exceeded the demand, something had to be done to stimulate the demand, and the installment plan is the result. One can now buy anything from groceries to garages on "easy payments," and the sale of

automobiles, radios, pianos, vacuum cleaners, furniture and hundreds of other things is, in consequence, much easier and more brisk than it otherwise would have been. Moreover, people do not howl about the expense as they would if it were necessary to plank down the entire sum in one roll.

But the manufacturers could not afford to maintain a clerical staff sufficient to look after all of the details of thousands of installment accounts, so the acceptance companies came into being to handle these matters.

The principle of the thing is this: The purchaser of a radio, for instance, makes a down payment of $25 on a $125 machine and signs ten notes for $10 each, payable one a month, plus a reasonable interest. The dealer indorses the notes, takes them to the acceptance company and receives their face value, less ten or fifteen per cent. or thereabouts, at once. The company collects the payments.

Of course, credit ratings are looked up all around, and equally of course, the dealer sets the price of the instrument at a figure which includes his discount. The buyer pays a little more, but coming in small driblets, it doesn't seem so hard. Everybody is happy.

One reason why so much fuss is being made about the costs of medical service is that people are, or have been, expected to write a check for the entire amount when it was demanded. If they could budget this expense after it is incurred, instead of before, much of the outcry would die away.

An operation at $200 looks formidable to a patient of small or moderate income; but $50 down and ten payments of $15 each sounds reasonable to him. The surgeon receives $175 to $185 for his services at once, and has no trouble or expense in collecting his balance.

Of course, illness and automobiles are not quite in the same class. If a man comes down with pneumonia or breaks an arm the physician he calls hardly has time, in many cases, to look up his credit rating before ministering to his needs. But the time to get a settlement for services is when they are rendered. When the case is discharged the bill should be presented. If the patient can not pay it the installment plan of settlement should be suggested immediately. Many patients would welcome a method by which they could settle with the doctor promptly.

Operations of election are, in a sense, luxuries and should be financed at leisure. All chronic cases should be accepted for treatment on a flat-rate basis and financed in advance. Physicians have much to learn from the big business men.

Such services are not, at present, available everywhere, but things look as if they would be in the not distant future. The speed with which they come will depend largely upon the way the proposition is received by medical men. Any such proposition should, however, be scrutinized with great care because, to be safe and successful, such an enterprise must be strongly financed and honestly and intelligently managed. Many physicians have lost money by becoming mixed up with fly-by-night financial concerns.

We suggest that every one who has an opportunity to do so should look into this matter as soon as practicable and should consider how the plan can be adapted to his needs. It would appear that this may be a solution for many of the doctor's most pressing economic problems.

OUR STATE SOCIETY LEGAL COUNSEL —A CANDIDATE FOR GOVERNOR

Francis X. Busch, attorney for the Illinois State Medical Society and Chicago Medical Society is a candidate before the primaries for Governor on the Democratic ticket.

Mr. Busch has practiced law in Chicago since 1901; has been a professor and Dean of the De Paul University Law School since 1912; has been Dean emeritis since 1923; master in chancery, circuit court, Cook County, 1920-1922.

Mr. Busch was attorney for the Board of Election Commissioners 1922-1923; corporation counsel of Chicago, 1923-1927; President Chicago Bar Association, 1929-1930; temporary corporation counsel and permanent counsel to the present mayor's advisory commission, and author of many law books.

Mr. Busch formulated the anti-religious plank at the last National Democratic convention. He has never held an elective office, but has held positions of trust in the most satisfactory manner. This should recommend him highly under the present existing regime of economic political disaster.

Mr. Busch has served the medical society in the most efficient manner. His presence in a law suit usually means success for his client.

NATIONAL LEGISLATION ON MEDICINAL LIQUOR

The Journal of the A. M. A., January 23, 1932, comments editorially on legislation on medicinal liquor as follows:

The arbitrary and unreasonable limitations on the medicinal use of alcohol and alcoholic liquor, now imposed by the National Prohibition Act and supplementary legislation, will be removed if the bill (S. 3090) recently introduced by Senator Copeland at the request of the American Medical Association is enacted. Its enactment will make effective, too, the unanimous recommendation of the Wickersham Commission that the limitations of which the medical profession complained be removed. The bill, prepared by the Bureau of Legal Medicine and Legislation under instructions from the House of Delegates, was introduced by Senator Copeland, January 18. It proposes that the present specific quantitative limitations be removed and that the law provide only that a prescription be not given for more liquor than is necessary to supply the patient's medicinal needs. To discourage persons from attempting to obtain medicinal liquor through subterfuge, with a view to converting it to beverage uses, the bill proposes to make it unlawful for any person, by any false statement or representation, to induce any physician to prescribe liquor when it is not medicinally necessary or in excess of the quantity medicinally needed. If this bill is passed, the limitation on the number of prescription blanks that may be issued to a physician will be removed.

The Secretary of the Treasury and the Attorney General are to continue as at present to issue such regulations as are necessary for the enforcement of the law, but the bill provides that no limit shall be imposed by any such regulation on the number of prescription blanks a physician may obtain or the number of prescriptions he may write, or on the quantity of liquor he may prescribe to any one patient. The confidential relations between physician and patient are to be insured by providing that no physician shall be called on to file any statement, in any office of the government, of the ailment from which his patient is suffering, or to keep his records in such a way as to lead to the disclosure of of such ailments, except that he may be required to disclose such information in court or in course of hearings held under the National Prohibition Act or to disclose it to duly qualified persons engaged in the execution and enforcement of the act.

The enactment of this bill will enable physicians to employ alcohol and alcoholic liquor medicinally in such doses as are therapeutically indicated, instead of being limited to a dosage arbitrarily fixed by statute. It will protect professional secrecy. It will thus remove the principal grounds for resentment against the national prohibition laws that so many physicians feel in the practice of their profession. Whether it is or is not enacted will depend largely on the activity of the medical profession throughout the country in making known their desires with respect to the matter. In the Senate, the bill that has been introduced has been referred to the Committee on the Judiciary, of which Senator George W. Norris of Nebraska is chairman. It is expected that a companion bill will be promptly introduced in the House of Representatives and be referred to the Committee on the Judiciary, of which Representative Hatton W. Sumners of Texas is chairman. Letters and telegrams urging the enactment of such legislation should be promptly forwarded to the chairmen of the committees named and to the Senators and Representatives from the states and districts in which the senders of such telegrams reside.

VITAMIN D CERTIFIED MILK ON CHICAGO MARKET

The Chicago Medical Society Milk Commission will place a Vitamin D Certified Milk on the Chicago market, February 1st.

We believe this to be a definite forward step in milk production. This milk will contain 150 rat units of vitamin D to the quart which corresponds to the vitamin content of 15 cc. of cod liver oil or ten units of Viosterol.

Researches by Steenbock at the University of of Wisconsin and Alfred Hess at Columbia have demonstrated that the feeding of a proper amount of irradiated yeast to cows, results in the production of milk containing the amount of vitamin D quoted above.

The control work necessary for the guarantee of this milk will be done by the Wisconsin Alumni Research Foundation.

Experiments have been made to determine the effectiveness of this milk upon infants and white rats. At Wisconsin, rats so rickety that they were unable to walk without wobbling recovered completely when this milk was added to their diet.

Dr. Hess supervised the feeding of 102 infants and reported that the vitamin D Certified Milk not only prevented rickets but cured cases already developed.

Edwin Wyman of Boston showed by x-ray studies that the vitamin D milk brought about a change from rachitic to normal bone growth.

SOCIAL INSURANCE IS CONTRARY TO THE FUNDAMENTAL PRINCIPLES OF DEMOCRATIC GOVERNMENT*

All forms of Social Insurance are contrary to the spirit of democratic government. They destroy individual incentive, initiative and self-reliance. They substitute paternalistic control for independence of thought and action. We pride and congratulate ourselves on living under a democratic form of government but most of us fail to realize that we are slowly but surely drifting away from the true democratic spirit in government—that we are gradually substituting a hybrid form of government—a cross between bureaucracy and socialism. Personally, I am a firm believer in democracy and believe that many of our present ills are the direct result of already having deviated too far from the fundamental principles of democracy.

Individual responsibility is the foundation of democratic government. If a nation does not educate its citizens to individual responsibility, it will soon have no one capable of assuming public responsibility. Slowly through the ages the common man has risen from chattel slavery and serfdom to independence, freedom and personal liberty, and now some well-meaning but misguided people want to undo all this. They want to enslave him again, making him in fact a bondsman of the state. Organized society is forever forging new chains with which to shackle the free development of its members. It is forever meddling with the private affairs of its citizens. One of the best illustrations of this statement is found in a recent survey of the Citizens' Bureau of Milwaukee which found that that city is engaged in approximately three hundred different functions, one-fifth of which have been added during the last sixteen years. Milwaukee is no worse in this respect than many other cities in this country. Add to this the activities of the county, state and federal governments, and we find an explanation of the following fact: "In a period in which the population of the United States has increased ten per cent. the number of persons holding civil office has increased forty per cent. and the amount paid in salaries has increased one hundred and fifty per cent." Thirty years ago one person in every forty-five was in government employ, while now one in every twelve is so employed.

"It is a profound mystery why the people of the present generation should so violently run after the very things their forefathers so violently ran away from in 1776. One of the chief indictments of King George set forth in the Declaration of Independence reads: 'He has erected a multitude of new offices and sent hither swams of officers to harass our people and eat out their substance.'"

In a recent article, Dr. Harry Emmerson Fosdick makes a statement that seems particularly suitable in this connection. He, said "Many of those in society who are dissatisfied with present conditions know what they want to get away from, but they do not know whither they are going." I would add "nor do they seem to have any clear idea as to what they want." Before we adopt new laws we should make reasonably sure that such laws will not introduce new and greater evils than they are expected to cure, that they can actually be enforced, and that they are not likely to be abused in their administration.

A far-reaching innovation such as Social Insurance must be viewed from many angles. We must consider its effect upon the general public, the insured, the employer, and the medical and dental professions.

If we are deliberately trying to get away from the democratic form of government having a definite objective in view; and if we are reasonably certain that the goal for which we are headed is worth while and is going to result in general social and economic betterment, an experiment with Social insurance might be justified, but, even then, it is well to carefully weigh and consider what the

*Second installment of Ochsner's articles on Medical Economics.

wise founders of our government had to say on this important subject. I quote from the Declaration of Independence, "Prudence, indeed, would dictate that government long established should not be changed for light and transient reasons." If we a nation are just aimlessly drifting, as we seem to be, we are almost sure to get into serious trouble. We believe that we shall be able to show conclusively, in future articles, that in those countries in which it has had prolonged and extensive trial it actually has had serious consequences. These latter problems will be taken up in subsequent articles.

CHAULMOOGRA OIL IN THE TREATMENT OF CHRONIC ARTHRITIS

In the *New Orleans Medical & Surgical Journal,* September, 1931, Dr. McIlherny reports a series of thirty-nine cases treated with Chaulmoogra oil.

When the report was made thirty-nine cases had been discharged from the hospital and nine cases were still under treatment. Report covered cases of atrophic, hyperthropic and mixed forms. Every patient showed improvement, many complete relief of symptoms and restoration of function and other arrestment of the disease and reduction of deformity. No patient was admitted to the hospital with a return of the condition. The Johansen formula was used, consisting of benzocaine 0.2 gm., olive oil, 10 c. c., crude Chaulmoogra oil (P. D. & Co.), 90 c. c. Five c. c. are injected into the deltoid and eight c. c. into the buttock, alternatively. Injections are given bi-weekly. The oil, preferable in enteric capsules of 1.6 c. c. each, is also given by mouth three times a day. Improvement is usually apparent during the second week.

THE EVILS OF MEDICAL SOCIALISM IN ENGLAND

The A. M. A. Journal London letter, November 7, 1931, has the following comments on the "Evils of Medical Socialism." We quote:

"The scheme of the British Medical Association for a national medical service that would provide treatment for every class and cover the whole field of preventive and curative medicine was described in a previous letter (THE JOURNAL, May 17, 1930, p. 1612). After the crushing defeat of the socialists in the general election and with the stringent economy and over-taxation rendered necessary by their prodigal expenditure, such extension of the medical socialism of the insurance act is not to be feared for the present. In an address to the Windsor and District Medical Society, Sir Ernst Graham-Little, dermatologist and member of parliament for London University, criticized the association's scheme. He said that it would perpetuate and indeed aggravate the radical defect of the present insurance act—the restriction of insurance benefits to what was described in the act 'as general practitioner treatment.' This was one of the principal reasons for the dissatisfaction of the insured with the service supplied. Sir Arthur Newsholme, formerly principal medical officer to the local government board, obviously no unfriendly critic, described that service in a recent address as 'representing in many ways an obsolete ideal of medicine.' The drastic reduction of the capitation fee of panel physicians has been described in previous letters. The medical profession had been able to meet this cut with something like equanimity, because panel practice was not the sole resource of the majority of practitioners. 'The problem of the out-patient at the voluntary hospitals' had arisen. Partly as the result of dissatisfaction of insured persons with the national insurance service, the number of out-patients at all the hospitals throughout the country has risen continuously during the last decade, and the remarkable position has come about that, notwithstanding a health insurance involving compulsory contributions and therefore no expense on receiving treatment, which was confidently expected to deplete our out-patient departments, the attendance has risen continuously since 1920 until it now exceeds the figure before the act came into operation. The suggestion that the hospitals should receive only such patients as were countenanced by physicians acting under the orders of the British Medical Association was a complete misapprehension of the situation. As the expenses of the hospitals were met by the general public, such an assumption of authority would not recommend itself to those who supported the institutions who were now largely the working classes themselves."

AN INSURANCE PLAN OF BENEFITS vs. A HOSPITAL PLAN OF BENEFITS FOR EX-SOLDIERS OF THE UNITED STATES

H. H. SHOULDERS, M.D.
NASHVILLE, TENN.

When the World War ended, the government of the United States set about making provisions for the care of all the soldiers who had suffered disabilities of any kind during their military service. Hospitals were acquired or erected in sufficient number and size to accommodate the hospital needs of all such veterans. As time went on, a large number of these veterans either recovered, died or reached a state of improvement that a hospital could be of no further benefit. For these reasons, in 1924 a large percentage of the beds in veterans' hospitals were vacant. Then it was that the Congress enacted an amendment to the World War Veterans' Act, known as paragraph 202-10. It provided that veterans with certain specified forms of disability, not of service origin, would be admitted free of charge to veterans' hospitals so long as beds were available.

In 1926, two years later, paragraph 202-10 was amended, and among other things the amendment said, in substance, that all veterans will be admitted to veterans' hospitals, free of charge, *without regard to the nature or origin of their disabilities.* This is a short sentence with enormous meaning. It means that every veteran of every military conflict since and including the Spanish American War has access to a veterans' hospital and free transportation to such hospitals, without regard ot the nature or origin of his disability, provided his disability requires hospitalization. Thus was inaugurated a new policy on the part of the Federal Government toward its ex-soldiers. This is the provision of the World War Veterans' Act that is under discussion.

Since 1926, the Congress has appropriated several millions of dollars for the erection of new hospitals and the enlargement of old ones. The last short session of Congress alone appropriated $16,350,000 for this purpose.

In 1930, approximately 70 percent of the admissions to veterans' hospitals were for disabilities that were not of service origin.

As of March 31, 1931, there were fifty-three veterans' hospitals in operation having a standard bed capacity of 25,930.

Thus the new policy toward veterans with nonservice connected disabilities was inaugurated, and thus the program of hospital construction has been launched.

The medical council of the veterans' bureau has estimated that the maximum number of beds needed will be 129,859 on the assumption that veterans of all wars are given a mandatory right to hospitalization. The consummation of this plan would involve the construction of about 103,000 beds in addition to the 25,920 already built. The construction program, therefore, is only 20 per cent complete. It obviously would require years of time and the appropriation of many millions of dollars to complete the construction program.

The average cost of constructing veterans' hospitals is approximately $3,500 per bed. The average cost of the professional staff is $151.56 per year per bed. The cost of miantaining these hospitals in 1930 was $4.42 per bed per day, or $1,613.30 per year per bed. The cost of completing the construction program alone would amount to over $360,000,000. The cost of the professional staff would amount to over $19,000,000 per year, when completed. The cost of maintenance, when completed, would be about $200,000,000 per year. These are not all. The cost of equipment and the cost of transportation of veterans to and from the hospitals cannot be even approximately estimated.

This is the program that we have proposed should be stopped. We have not suggested the arrest of the program, however, without offering a substitute plan that would be more equitable and satisfactory to veterans, far less expensive to administer and far less destructive in its effects on the whole system of medical and hospital practice in this country.

Our proposition is that the government of the United States issue to each veteran a disability insurance policy with two benefit provisions: (1) a weekly cash benefit payable to the veteran during any period of total disability, and (2) the payment of a liberal hospital benefit sufficient to cover the hospital expenses during any period of hospitalization. The hospital benefit is in addition to the cash benefit.

It is intended that every veteran who is benefited under the provisions of paragraph 202-10 should receive such a disability insurance policy. It is further intended that these benefits shall be payable for nonservice connected disabilities only.

There is nothing in the provision of this plan that would interfere with any other benefit any veteran is receiving, whether from a service connected disability or a nonservice connected disability. It is intended that this particular form of benefit take the place of those benefits provided for in paragraph 202-10 of the World War Veterans' Act, as amended, nothing more, nothing less.

THE COST OF THE PLAN

In order to arrive at an approximate estimate of the costs of administering the benefits provided for in the resolution in which the insurance plan was proposed, it was necessary first to establish the amount of the weekly cash benefit and the amount of the weekly hospital benefit. It is also necessary to estimate the number of weeks of disability that veterans will experience. For the purpose of making these computations, the amount of $20 is set up as the weekly cash benefit and the amount of $20 is set up as the weekly hospital benefit. For the purpose of estimating the number of weeks of disability veterans will experience, the cooperation of a capable actuary was obtained, who is Mr. W. H. McBride, of the National Life and Accident Insurance Company, Nashville, Tenn. His company does business in thirty-eight states. It is one of the large industrial companies in this country

insuring men and women, white and colored. Their disability experience is slightly over one week per year per person.

Fisher estimates one week of disability per year per person in industrial groups. Other disability insurance companies experience disability rates that are less than these.

Veterans of the World War as a group should be excellent risks for disability insurance, for several reasons: 1. They are all men. 2. They stood a rigid physical examination in 1917 and 1918. 3. The service connected disabilities of veterans are eliminated from the insurance plan. It must be remembered that all veterans who developed tuberculosis prior to 1925 are service connected on tuberculosis and draw benefits as such. For these reasons and others that might be mentioned, veterans of the World War should not experience a rate of disability in excess of the average for this country for a similar age group. A disability rate of one week per year per man is a liberal estimate for the ex-soldiers of the United States.

Assuming there are 4,000,000 veterans still living, the cost of the two benefits for the first year would be as follows:

Wekly cash benefits to veterans	$80,000,000
Hospital benefits to veterans	8,000,000
Cost of administration	4,400,000
Total	$92,400,000

The amount of the hospital benefit is based on the assumption that hospitalization would be required for 10 per cent of the weeks of disability. That again is a liberal estimate. A majority of the illnesses of men do not require hospitalization, and conditions that do require hospitalization do not require hospital care for the entire period of disability. For example, a man is operated on for acute appendicitis. He is confined in a hospital for a week or ten days, but he is disabled for a period of six weeks. The weeks of disability requiring hospitalization then should not be in excess of 10 per cent of the total weeks of disability.

The cost of administration is estimated to be 5 per cent of the total benefits. That again is a liberal estimate. It will be borne in mind that there are no selling costs in this plan, no agency fees, no taxes, no profits, no postage, etc., all of which items consume a large percentage of the premiums paid insurance companies by policy holders. The cost of passing on the validity of claims by the Veterans' Bureau would be the only cost of consequence involved. That organization exists already and must continue for the administration of other laws. In fact, it would cost more to make examinations of veterans to determine the need of hospitalization under the hospital plan than it would cost to determine the question of total *disability* under the insurance plan.

I have gone into some detail in reference to these matters to show that the figures and estimates are not fiction at all. They are the results of careful analysis.

The cost of maintaining the hospitals under the hospital plan, to say nothing of other costs when completed, would be more than double the cost of the insurance plan the first year.

The rate of disability in an age group corresponding to veterans of the World War will diminish each year. The cost of administration will diminish accordingly. The disability rate will diminish at a rapid rate until the veterans attain 60 years of age. There are no reliable data on which to base an estimate of the disability rate to be expected from those who attain an age beyond 60 years.

The insurance plan, when enacted, can provide for its termination as veterans attain that age, or it can be continued. I see no reason why it should not be continued until the death of the veteran. A majority of veterans will not attain age 60. Those who do can draw under the insurance plan if and when disabled. Those who are hale and hearty at age 70 would not draw.

THE ADMINISTRATION OF THE VETERANS' HOSPITAL PLAN

The policy of administering the veterans' hospitals at the present time is as follows:

When a veteran is taken ill, he calls his family physician. The family physician suggests that he should go to a hospital. The veteran says he wants to go to a veterans' hospital where he can have all his services free. He then makes application to the Veterans' Bureau of his state for hospitalization. The Veterans' Bureau then makes an examination of the veteran to determine as to whether or not he needs hospitalization. If it is determined that hospitalization is needed, the bureau takes steps to locate an available bed, and when the available bed is located arrangements are made to send the veteran to the hospital. He is admitted and remains in the hospital until discharged. His expenses are paid to and from the hospital.

THE ADMINISTRATION OF THE INSURANCE PLAN

Under the insurance plan the same veteran is ill from the same condition. The family physician is called and suggests the need of hospitalization. The physician makes a report of the illness to the Veterans' Bureau of his state on a form provided. The veteran immediately selects the civilian hospital in his community that he prefers to go to, and is admitted. He selects the type of service in the hospital he prefers. He remains under the care of the physician of his own selection. When hospital service is no longer needed for his condition, he is discharged to convalesce under home surroundings. The moment his disability begins, his weekly cash benefit begins. It ceases when his total disability ceases. His hospital benefit begins on the day of admission to a hospital. It ends on the day of his discharge. The Veterans' Bureau instead of making an examination to determine the need of hospitalization makes an investigation to determine the question of total disability.

In short, the insurance plan of benefits would be administered just as any insurance benefit is administered. The officials of the Veterans' Bureau acting as the agents of the government.

A COMPARATIVE STATEMENT OF THE BENEFITS UNDER THE TWO PLANS

Under the insurance plan, the benefits are available to every veteran the moment it is enacted into a law. The veterans will not wait for the completion of an enormous hospital construction program.

Under the hospital plan, the benefit will not be available to all veterans until a sufficient number of hospitals have been built to accommodate all their needs, and then will benefit only those who need hospitalization and can avail themselves of it.

The insurance plan is of equal benefit to every veteran. The veteran who resides in the most remote section of this country, far removed from a veterans' hospital, receives his benefit during a period of disability just the same as the veteran who resides next door to a veterans' hospital.

The hospital benefits are of unequal benefit to veterans because the benefits are available to the veterans who live near hospitals and not available to those who live at a distance. It sometimes seems to me that those who have planned the benefits for veterans that have been enacted into law, assume that all veterans live in large cities. They seem to forget that there are veterans in every civil district in the United States.

Under the insurance plan, the veteran who is disabled draws a cash benefit when disabled from a cause that does not require hospitalization. The moment he leaves his job on account of disability his income ceases, but his cash benefit begins.

The hospital plan is of benefit only to the veteran whose condition requires hospitalization.

Under the insurance plan, the weekly cash benefit of the veteran can be applied to the support of his family while he is confined in a hospital.

Under the hospital plan, the family receives no government benefit while the veteran is confined in a hospital. If the veteran is indigent, his family is dependent on community charity or, as in many cases, on the welfare committee of the local legion post.

The insurance plan is economical to administer in that government organizations already in existence can administer the law and the veterans receive the full benefit of every dollar spent by the government, except a small percentage that is required to cover the cost of administration.

Under the hospital plan of benefits, all of the money spent by the government goes into the cost of construction, the cost of hospital equipment, the cost of hospital administration, the cost of transporting veterans to and from the veterans' hospitals and the salaries of a large personnel, etc. The veterans would never get their hands on one single dime of that enormous amount of money.

Under the insurance plan, the veteran takes his benefits and applies them to his needs when disabled.

Under the insurance plan of benefits, when the last ned of the last veteran has been served this plan of benefits will automatically end. There will be no buildings or equipments to be abandoned, and no large group of employees to be discharged.

Under the hospital plan, when the need for such an enormous number of beds has disappeared the hospitals will remain open with vacant beds at enormous costs, or the buildings and equipments would be abandoned and the personnel disbanded, or the policy of administration might be altered so as to admit all federal employees, or the families of veterans, or the general public, etc., and thus fix such a hospital program as a part of the federal government.

One need not for one moment assume that such a hospital program would be abandoned if it is ever completed. It would continue, its costs would multiply and its end would never be seen. Its political influence would be too large.

The adoption of the insurance plan would have the effect of lifting every indigent and disabled veteran out of every charity hospital in America in one day. It would take the name of every indigent and disabled veteran off the charity list of community agencies. It would take every disabled and indigent veteran off of the backs of the welfare committees of every local legion post, and so one might go on indefinitely.

In making plans for the benefit of groups of people, it is necessary to understand something of their needs and circumstances.

It has been estimated that about 60 per cent of the veterans of the World War are wage earners who are unable to finance themselves when disabled. Just think of the veterans who are tenants on farms at the present time, who are unable to finance an illness and who are not inclined to travel a long distance to a veterans' hospital, even though its services are free. Apply the insurance plan to any group you care to and the result is the same regardless of where they live. The moment a veteran is overtaken by disability from any cause that is not service connected his most urgent economic needs are met.

A question that will arise often is this: Who will pay the doctor under the insurance plan? The answer to this question is simple. The veteran himself will pay his doctor if he is able to pay. If he is unable to pay, his doctor will do the work just as he is doing today, as charity. This plan was not offered as a benefit for doctors. It was inspired by an interest in veterans.

If a veteran is on an economic scale above that of a wage earner, he can at little cost carry additional insurance that will meet all his costs of illness, or he can meet such costs out of his savings.

Many disability insurance contracts written by standard companies have a clause that provides a specified sum for medical and surgical fees. Such a provision was left out of this plan, intentionally, and if it is written into it, it will be done by others and not by doctors.

I might also state that the veteran pays for his care under the hospital plan in the event the illness does not require hospitalization, or in the event he cannot go or does not want to go to a veterans' hospital. By and large, a majority of disabled veterans at the present time receive no benefit under the hospital plan, and a large percentage would not receive any benefits under the hospital plan when completed.

Just think for a moment of the more prevalent illnesses and injuries that cause total disability. First on the list is acute influenza. Hospitalization is not necessary in a vast majority of such cases. The hospitals are of no benefit to them. The most prevalent cause of injury is automobile accidents. Such cases are emergencies; the patients are sent to the nearest hospital. The veterans' hospitals are of limited benefit to them. Of the acute surgical conditions, acute appendicitis is the most prevalent. It is an emergency—delay and long travel is fatal. The hospital plan is of benefit in few such cases, and so on. The veterans' hospital plan is of the most benefit in chronic cases.

An important question to be determined is this: Are there sufficient civilian hospitals already built to accommodate all the needs of all the veterans in addition to civilian needs? The answer is emphatically "Yes."

The construction of hospitals in the United States has gone forward in the last ten years at a rapid pace. There is a hospital located in every important center of population in the United States. One can hardly think of a region, however remote, where a man would be one hundred miles distant from a hospital, and over most of the territory of the United States there is a hospital within fifty miles of most any given point.

A recent survey made by the American Medical Association shows there were 120,786 vacant beds in general hospitals in the United States in 1930. In addition to this, there was a daily average of 58,615 vacant beds in special hospitals.

The construction of veterans' hospitals is not necessary on account of the lack of a sufficient number of hospital beds.

A FEW QUESTIONS

The balance of this brief discussion will be devoted to the consideration of several specific questions that have been raised.

One of the first questions raised was this: What will happen to the veterans' hospitals already in operation if the insurance plan should be enacted by Congress?

The answer is very simple. It would have no effect at all on the structure or personnel of these veterans' hospitals. It would affect the policy of their administration *only so far as veterans with nonservice connected disabilities are concerned.*

Veterans would be admitted free of charge for disabilities that are service connected. Veterans would not be admitted, free of charge, for disabilities that are not service connected. The veterans' hospitals could admit such veterans on a pay basis. The rate charged such veterans could be equal to the hospital benefit provided for in the disability insurance policy. By such an arrangement the veterans themselves would elect as to whether they go to a veterans' hospital or not.

This point should be made clear. The resolution in which the plan under discussion was proposed calls for the abandonment of a policy. It does not call for the abandonment of hosital buildings. The policy referred to is that which provides free hospital, medical and surgical service for veterans with nonservice connected disabilities (paragraph 202-10 as amended).

Another question is one raised by doctors. Some one suggested that this insurance plan of benefits is a species of state medicine. It is not at all. Every plan of state medicine has in it two features: (1) a plan of financing, and (2) a plan for rendering the professional service—in which plan the state is given some degree of dictatorial power over the patient in the selection of his physician. For example, the hospital plan of the veterans' bureau at present is an example of absolute state medicine. It is financed by the government, and the patients accept the services of whatever doctors the government places in charge of them.

The plan proposed in the resolution relates to financing only. The veteran is given complete liberty in choosing his physician and his hospital. There is no interference with that relationship that we insist should exist between doctor and patient for the best results.

Men still misinterpret the relationship of the veteran with a service connected disability to the insurance plan. His relationship is simply this: he has been given certain benefits by reason of a certain disability that is due to service (a service connected disability). The plan interferes with those benefits in no way at all. The insurance plan would come into use should another disability arise that is not service connected. For example, a man received an injury to the left leg during service, for which disability he is drawing compensation. If his right leg is fractured in an automobile accident, then he would draw the benefits provided for in the insurance plan.

Another question is with reference to insurance companies. It has been suggested that they would oppose the adoption of this plan. This can be answered so far as the largest company in Tennessee is concerned. A member of the committee of Post No. 5 at Nashville, which was appointed to consider the plan, submitted our plan to the insurance company for an opinion on that very point. The answer of that company was that the officers would not oppose the adoption of the plan.

It will be recalled that the war risk insurance that soldiers bought (were compelled to buy) during the war has had no ill effect on the sale of life insurance, but on the contrary has stimulated the sale in rural communities in which life insurance likely never would have been sold in large volume but for a demonstration of its benefits.

Just here I might say that the war risk insurance was operated at a profit. Those of you who still have the insurance in force know something of the dividends that are paid on those policies.

A question frequently raised is with reference to the cost of administering the benefits under the insurance plan. Some have seriously questioned the accuracy of the figures submitted and others have said, even Director Hines of the Veterans' Bureau, that the cost of every benefit provided for veterans so far has far exceeded their estimates. Well, no wonder. Look at the forms of benefit. Many of the benefits so far provided are varying amounts of money to the veterans for varying degrees of partial disability. For example, a man

who has a permanent partial disability of 25 per cent will draw $12.50 per month, and so on. There are no accurate data as a basis for estimating the cost of such benefits, no previous experience on which to base estimates of costs. Actuaries who estimated the cost of war risk insurance made accurate estimates based on previous experience. The cost has been less than estimated. This is the only benefit that has cost less than preliminary estimates.

I insist the same is true with reference to this disability insurance plan. The estimates are by men who know, based on large experience extending over many years. On the basis of such estimates, large insurance companies conduct a profitable business. Think of what would happen to the Metropolitan Life Insurance Company if its estimates were all wrong.

Under the plan we propose there is no selling cost, no profit, no taxes, not even the cost of postage. The only costs are the net cost of the two specific benefits and the overhead cost of administration. Again large disability insurance companies know how much it costs to investigate each claim. You would be surprised to know how little it is. At any rate, the 5 per cent of the benefits allowed for the cost of administration in my calculation is a liberal estimate, based again on experience.

Wild statements as to the enormous cost of administering the insurance plan of benefits for veterans must not be allowed to go by unchallenged. In some instances they are made in ignorance but perfect sincerity, and again they are made by those opposed to the adoption of the plan in order to frighten us, the veterans and the Congress into abandoning the thought of its adoption.

Another question often put by men who now understand the plan is "why would veterans oppose its adoption?" The answer to this question is simple, too. In the first place there is a small minority in the American Legion that determines its policies. Many of the men in this small group are drawing salaries under the existing system. They are committed to the hospital plan. They have had much to do in planning all the benefits that have been enacted into law. The rank and file of veterans who are busy with private affairs have not informed themselves. We must awaken those veterans who have taken no interest in legion affairs beyond that of paying dues and stimulate them to make some analysis of their leaders.

Another question is: Why should doctors be so interested? Are they looking out for number one? Are they seeking a financial benefit for themselves? The answer is "No." We are seeking something far greater than that. *We are seeking to preserve a great American institution.* There has grown up in this democracy of ours, as a part of it, a system of medical and hospital practice based on democratic principles. In that system the patient has a right to select the doctor who attends him. He selects the one in whom he places a confidence. The doctor, on the other hand, is privileged to attend those who wish his services. A doctor who acquires a superior ability is rewarded by a larger patronage. There is no element of political preferment in it. There is no element of political intrigue in it. There is no government red tape in it. The doctor who renders poor service is not protected by a civil service regulation. It corresponds in principle to our democracy. It is in perfect harmony with it.

That system of medicine affords the highest type of professional service to the public to be had in any country on earth, bar none. That system *is the American institution we would preserve.* We would hand it on down. For the benefit of doctors? No. For the benefit of mankind, veterans and nonveterans alike.

We hold that no nation, no age, no group of men, not even the medical profession, holds a title of ownership to the science of medicine. We believe that the profession of medicine has earnd the right to a trusteeship only. We have in the past so conducted ourselves toward that science as to warrant the confidence of the public in such a trusteeship.

We sincerely believe, yes, we know from what has happened in other parts of the world, that when that system of medicine is broken up and supplanted by a bureaucratic distatorship the whole service will deteriorate.

EDUCATIONAL COMMITTEE

December, 1931, and January, 1932

SPEAKERS' BUREAU

86—Lay meetings were addressed by speakers scheduled through the Educational Committee:

45—Of these appointments were in Cook County.

41—Downstate counties.

Groups Represented

Churches, Parent Teacher Associations, Women's Clubs, Young Mothers' Clubs, Rotary, Kiwanis, Lions, Y. M. C. A., Hospital staffs and nurses, public meetings, Business and Professional Women's Clubs, District Meetings of Women's Clubs.

Subjects Discussed

Mental Hygiene, Cost of Medical Care, Cancer, Sex Hygiene, Health and Safety, Health as a Business Asset, Health in Illinois, Normal Development of the Child, Understanding the Adolescent, X-Ray and Radium, Preventive Medicine, Legal Medicine, Diphtheria Immunization, Animal Experimentation, Skin Infections, Parents Responsibility to the Child, Health Problems Common to the Veterinary and Public Health Professions, Serums and Vaccines, Your Weight, The Medical Practice Act, Science and Superstition, Socialized Medicine.

Reports Received

"It was one of the finest health talks ever given. The general expression about the meet-

ing was one of appreciation of the lecture. The speaker through his fine choice of words, earnestness and interest in his subject, gave a very convincing lecture. The time passed too quickly for everyone. Various ones expressed a hope that he might return sometime for another lecture."

"Very interesting, humorous, and well delivered."

"A very interesting speaker, presenting valuable facts for consideration. Showed the vast amount of authoritative suggestions for young mothers in the rearing of their children."

"One of the most interesting speakers we have ever had. The audience was especially pleased with the question the doctor answered. I had more favorable comments on this speaker than any you have sent to us before and we thank you so much. I can't say enough good things about this lecture."

RADIO

88—Radio talks were given over stations WJJD and WGN. These were given by members of the Chicago Medical Society. Speakers and Subjects:

Daniel H. Levinthal—Posture.
Davis H. Pardoll—Menace of Social Diseases.
Thomas D. Allen—Dangers that Steal our Sight.
Homer K. Nicoll—Why Your Child Should Be Vacinnated.
A. W. Stillians—The Aging Skin.
George W. Scupham—Some Blood Vessel Diseases of the Extremities.
Lester E. Garrison.
Coleman G. Buford—Goiter in Children.
L. J. Goodman—Prenatal Care.
Garwood C. Richardson—Prenatal Care, Your Baby's Safeguard.
Charles J. Drueck—Focal Infections.
Jacob D. Mayer—So-Called Indigestion.
Charles E. Pope—Hemorrhoids.
W. J. Potts—Acute Appendicitis in Children.
Percival Bailey—Tumors of the Brain.
A. N. Moore—Periodic Health Examinations.
Arthur J. Atkinson—The Irritable Bowel.
Frederick R. Schmidt—Your Skin in Winter.
L. M. Marley—Tonsil Disease.
J. Allen Weiss—The Significance of Ear Noises.
Samuel M. Feinberg—Winter Asthma.
Philip Lewin—Infantile Paralysis.
Leon M. Beilin—Economic Aspect and Control of Social Disease.
L. D. Snorf—Colitis.
Gilbert H. Marquardt—Rheumatism.
Herbert Ratner—Skin Eruptions Due to Household Articles.
John D. Koucky—Varicose Veins.
Hillier Baker—Cancer of the Breast.
Harry Jackson—Skull Fractures.
G. W. Nethercut—Cataracts.
Clement L. Martin—Rectal Diseases.
Jacob Meyer—Your Stomach in Health and Disease.
F. L. Heck—The Rational Diet.

Reports have come from Illinois, Iowa, Indiana, Michigan, Wisconsin and Minnesota about these radio programs.

PRESS SERVICE

1,545—Releases were sent out during the two months:

859—Regular press service—this includes the health articles, which are sent to newspapers in the state for publication over the signature of local county medical society or Illinois State Medical Society.

In addition to the many counties downstate making use of this health column, the following newspapers in Cook County carry the health education articles:

Oakland Outlook.
Home News.
North West News.
North West Ledger.
North West Town Bulletin.
Southtown Economist.
Suburban Star.
Jewish Daily Forward.

50—Releases about Madison County Medical Society.
4—Articles on Measles released to Cass County newspapers.
8—Releases on Scarlet Fever to Christian County.
22—Releases on Chickenpox and Scarlet Fever to La Salle County.
9—Releases on Scarlet Fever to Macon County.
54—Monthly Service—articles sent to newspapers using a health column once a month.
69—Newspapers, re meeting McLean County Medical Society.
53—re meeting Peoria City Medical Society.
57—re meeting Schuyler, McDonough, Fulton County Medical Societies.
36—re meeting Perry County Medical Society.
165—re meetings LaSalle County Medical Society.
86—re open meeting Chicago Medical Society.
6—re meetings of Chicago Medical Society and Special Societies, Chamber of Commerce.
67—Community newspapers, re meetings Branch Societies, Chicago Medical Society.

Community newspapers of Cook County receiving these notices are:

Oak Parker.
Oak Leaves.
Calumet Index.
Calumet Record (2 branches).
Daily Calumet (2 branches).
South End Reporter.
Jewish Daily Forward.
Garfieldian (3 branches).
West Town News (3 branches).
Oakland Outlook.

Southtown Economist (2 branches).
Liberty Bell.
Review.
Suburban Star.
Hyde Park Herald (2 branches).
Woodlawn News.
Southside Courier.
Park Extra.
The Norwester (2 branches).
Irving Park News.
Myers Publishing Co. (4 newspapers).
North Shore News.
Northcenter News.
Lincoln-Belmont Booster (2 branches).
Home News.
North West News.
North West Topics.
North West Town Bulletin.
Logan Square Herald.

Twenty-three health articles were written and approved.

The Educational Committee supplied material for publication in the first Child Health Magazine of the Chicago Herald and Examiner, which came out in connection with the Sunday, January 17, issue.

SCIENTIFIC SERVICE COMMITTEE

18—Scientific talks were arranged by the Committee.

Marshall Davison—Surgical paper—Kane County.

James H. Hutton—Recent Advances in Endocrinology—Perry County.

Frank F. Maple—Abortion and Its Treatment—Perry County.

Frank E. Simpson—Radium Treatment in Malignancy—Will-Grundy County.

M. F. Arbuckle of St. Louis—Sinus Disease—Jackson County.

Gaza DeTakats—Treatment of Varcose Veins—Will-Grundy County.

Emil Hauser—Low Back Pain—LaSalle County.

Roswell T. Petit—Recent Advances in Deep X-Ray Therapy—LaSalle County.

Archibald Hoyne—Immunization—LaSalle County.

Maximilian Kern—Non-Surgical Types of Goiter—Rock Island.

Hugo R. Rony—Obesity and Leanness—Will-Grundy County.

Lowell D. Snorf—The Stomach—Paris Hospital Staff.

David S. Hillis—The Management of the Labor Case—Paris Hospital Staff.

Edward J. Stieglitz—Certain Aspects of Arterial Hypertension—Will-Grundy County.

J. R. Ballinger—Medical-Legal Aspects of Medicine—Elgin.

Walter R. Fischer—Foot Problems—Will-Grundy County.

Sidney H. Easton—Orthopedics—Fulton, Schuyler, McDonough Counties.

W. H. Nadler—Diabetes—Fulton, Schuyler, McDonough Counties.

MISCELLANEOUS

Jasper County—Sent material on all phases of child health to be used during a county-wide child health program sponsored by the county medical society.

American Medical Association—Secured information for the Bureau of Investigation.

Illinois State Medical Society Committee on Medical Advertising—Secretary of Educational Committee secured reports from all state societies on medical advertising and followed up the leads.

State Department of Public Health—Committee secured cooperation of Chicago Pediatric Society in preparing follow-up letters to the series of prenatal letters used by the State Department of Health. Two of these letters are completed—"Immunization Against Smallpox and Diphtheria" and "Breast Feeding"—and the third, on "Signs of Illness in the Baby," is now being written. These were submitted to the Educational Committee before release to the State Department of Health.

The first letter in the series, prepared with the help of the Committee, appeared in the Decembr Public Health Nursing Journal.

Marshall Field & Company—Cooperated in a series of talks to young mothers. Speakers were suggested by the Committee to present the following subjects:

Some aspects of modern infant care.
Importance of Prenatal care.
Effect of Parents' attitude on infant's health and behavior.
Importance of Nursing the Baby.
Weaning the Baby—The Why and What of Supplementary Feeding.
Establishment of Proper Eating Habits.
Importance of Regular Health Habits, How to Establish Them.
The Environment and the Emotional Development of the Child.

LaSalle County Medical Society—Notices were mimeographed and sent both months to about 375 physicians.

Woman's Auxiliary to State and Cook County Medical Societies—Mimeographed study outlines and wrote letters to presidents and secretaries. Mimeographed notices for members.

State Society Committee on Medical Economics—Educational Committee secured material and outlines on the Cost of Medical Education and the Income of Physicians.

Special folders on health subjects compiled and sent to physicians.

Y. M. C. A.—Films secured for Wilson Avenue Y. M. C. A. and Englewood Y. M. C. A., Chicago.

Extension Department of the University of Illinois—Sought assistance of Committee in revising examination blank used for 4-H Clubs.

Minnesota Secretaries' Conference—Addressed by Dr. Harold M. Camp, who was asked to talk about the work of the Educational Committee of the Illinois State Medical Society.

Florida State Medical Society—Recently appointed an

educational committee. "This committee is not functioning for one month or one year, but it is laying the ground work for functioning on a much larger scale for some years in the future. At present, we are doing the ground work, and literally re-writing and fitting articles to our own Florida needs from articles that have been previously used, largely by the Illinois State Medical Society." The Educational Committee of the Illinois State Medical Society sent numerous articles to the Committee in Florida.

Respectfully submitted,

JEAN McARTHUR, Secretary.

ILLINOIS INSANE AND FEEBLE-MINDED POPULATION

The following table shows the population of all of the State institutions in the Department of Public Welfare on December 1, 1931, and comparison with December 1, 1930:

	—Inmates and Pupils Present—			
Institution	This Date	Year Ago	Increase	Decrease
Elgin State Hospital	3,643	3,571	72	....
Kankakee State Hospital	3,621	4,028	....	407
Jacksonville State Hospital	3,203	3,139	64	....
Anna State Hospital	1,913	1,924	....	11
East Moline State Hospital	1,824	1,805	19	....
Peoria State Hospital	2,609	2,667	....	58
Chester State Hospital	448	413	35	....
Chicago State Hospital	3,767	3,574	193	....
Alton State Hospital	1,435	1,415	20	....
Manteno State Hospital	833	....	833	....
Insane Group	23,296	22,536	760	....
Dixon State Hospital—				
Insane	469	491	....	22
Epileptic	567	545	22	....
Feebleminded	1,970	1,841	129	....
Lincoln State School and Colony	2,967	2,753	214	....
Illinois School for the Deaf	547	506	41	....
Illinois School for the Blind	245	235	10	....
Industl. Home for the Blind	92	90	2	....
Illinois Soldiers' and Sailors' Home	717	669	48	....
Soldiers' Widows' Home of Illinois	113	113	....	....
Illinois Soldiers' and Sailors' Children's School	705	664	41	....
Illinois Eye and Ear Infirmary	167	144	23	....
Research and Educational Hospital	224	152	72	....
Surgical Institute for Crippled Children	27	....	27	....
St. Charles School for Boys	684	811	....	127
State Training School for Girls	523	529	....	6
Illinois State Penitentiary	4,585	4,421	164	....
Southern Illinois Penitentiary	2,316	2,169	147	....
Illinois Women's Prison	95	140	....	45
State Reformatory for Women	116	4	112	....
Illinois State Reformatory	2,675	2,366	309	....
State Farm for Misdemeanants	607	553	54	....
Total	43,707	41,732	1,975	....

COD LIVER OIL HAS A VIGOROUS RIVAL

A new product, having sixty times the Vitamin A potency of cod liver oil and equal in antirachitic potency to Viosterol 250 D has been announced.

This product is Haliver Oil with Viosterol 250 D.

Haliver Oil is a result of extensive research by Abbott Laboratories and Parke Davis & Co., in which virtually every known source of this essential food factor was investigated. When the discovery was made that halibut liver oil appeared to have a far greater content of Vitamin A than cod liver oil or any other known fish liver oil, experimental supplies were obtained. After an extensive series of bio-assays, it was found that the Vitamin A potency is as a rule 100 to 125 that of cod liver oil and that its natural D content is usually 25 times greater than that of cod liver oil. A natural source as rich as this is almost certain to play an important role in nutrition and health.

In Haliver Oil with Viosterol 250 D, the halibut liver oil has been adjusted to a Vitamin A potency 60 times that of high grade cod liver oil in order that the convenient dose of 10 drops (3 minims) may equal that of 3 teaspoonfuls of cod liver oil. By supplementing its natural Vitamin D content with Viosterol, the antirachitic potency has been increased to equal that of Viosterol 250 D.

This discovery is of vast significance to the medical profession and is destined to play an important role in everyday practice. No longer will it be necessary to give large doses of cod liver oil which is so often "hard to take." Haliver Oil, because of the comparatively small doses employed, is neither nauseating nor inclined to cause gastric distress.

EXAMINATION BY THE AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination of the American Board of Obstetrics and Gynecology will be held in nineteen different cities of the United States and Canada at 2 p. m. on Saturday, March 26, 1932. The general, oral and clinical examination will be held in New Orleans on Tuesday, May 10, 1932, immediately preceding the meeting of the American Medical Association. Reduced railroad fares will be available. For detailed information and application blanks apply to the secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania.

NATIONAL TUBERCULOSIS ASSOCIATION

The Program

Pathological Section.....Dr. David T. Smith, Durham, N. C., Chairman

Clinical Section .....Dr. James J. Waring, Denver, Col., Chairman

Sociological Section .....Dr. J. L. Pomeroy, Los Angeles, Cal., Chairman

Administrative Section .....Mr. H. M. Cass, Huron, S. D., Chairman

SOME SPECIAL FEATURES

A Special Symposium; "Technique of Blood-Cell Count in Diagnosis."

The Best X-ray Exhibit Ever Held; More space. Better films. Demonstration of how to make cell count.

Discussions; Racial Aspects of the Tuberculosis Problem. The Child's Bill of Rights in Relation to Tuberculosis. By-Products of Tuberculosis Programs.

(For further information write the National Tuberculosis Association, 450 Seventh Ave., New York City.)

28TH ANNUAL MEETING

NATIONAL TUBERCULOSIS ASSOCIATION,

Hotel Antlers Colorado Springs, Col.

June 6, 7, 8 and 9, 1932.

DIAGNOSTIC CLINIC

For more than a year the staff of the Michael Reese Hospital has offered to physicians in the Chicago district a complete diagnostic service for patients of moderate means. This service was instituted with the idea of serving individuals of moderate means who have clinically obscure conditions or who require multiple consultations and laboratory examinations, and cannot afford individual specialists' fees. The service includes all laboratory work and medical consultations at a moderate fee. During the year the service has been tested, and it is believed that it has been of real value to the physicians who have availed themselves of it. It is now possible to offer the facilities of the Diagnostic Clinic to physicians located anywhere in the State of Illinois, and it is the purpose of this pamphlet to furnish the members of the Illinois State Medical Society with some details of the organization.

STAFF

The staff of the Diagnostic Clinic is composed of internists, surgeons and specialists who are members of attending and associate rank on the regular staff of the hospital. They are assigned to each case by rotation.

FEE

The minimum flat fee is $30.00. This covers all necessary consultations, laboratory work including electrocardiogram and basal metabolism, but excepting X-ray; X-ray charges vary from a minimum of $5.00 to a maximum of $10.00. Patients will be hospitalized only when this is necessary because of their physical condition, to facilitate the investigation or at the special request of the physician or patient. The rate for two to four-bed room accommodations is $3.50 per day and is an additional charge. All fees are payable in advance.

This clinic is designated to function expressly as a diagnostic aid to the practicing physician.

No therapy is practiced.

No patients are accepted unless referred by a physician.

Upon completion of the clinical investigation all facts are correlated and the findings and diagnosis together with therapeutic advice are submitted to the referring physician. The patient is returned to the referring physician for the report and for subsequent treatment.

In order to avoid delay and inconvenience it is highly advisable that a definite appointment be obtained before the patient arrives. For information or appointment write to Admitting Department, Michael Reese Hospital, or call Calumet 5540, extension 550.

Correspondence

ANENT DOCTOR SHOULDERS A. M. A. WAR VETERANS HOSPITALIZATION RESOLUTION

Chicago, Illinois,
January 29, 1932.

Dear Doctor Whalen:

At the June (1931) Session of the American Medical Association at Philadelphia a Resolution was adopted. This Resolution was introduced by Dr. H. H. Shoulders, of Nashville, Tenn., and has since been referred to as the "Shoulders' Resolution." The Resolution advocated the substitution of an insurance plan of benefits to ex-servicemen for the present building plan of the Veterans' Bureau.

In the Resolution it was provided "that the proper officers of this Association be instructed to approach the officers of The American Legion with the view of securing the adoption of the policy above set forth as a part of the legislative program of The American Legion," and further provided "that each State Medical Association be requested to form a committee whose duty it will be to approach the State and Legion Posts throughout the country with a view to securing the adoption of this program by them."

I believe that Illinois has always been in the front rank of organized medicine in the protection of the economic rights of its members. I call your attention to the fact that in January, 1931, at the meeting of the State Council of the Illinois Medical Society a Contact Committee of the society with The American Legion was formed. The Committee consisted of myself as Chairman with Dr. John S. Nagel, of Chicago, and Colonel Charles Center of Quincy as members. In February, 1931, the Council of the Chicago Medical Society authorized the appointment of a Contact Committee with The American Legion to represent that organization and Dr. Henry J. Way was appointed Chairman with

Dr. Maurice L. Blatt and myself as members. All members of this Committee are members of The Chicago Medical Post of The American Legion.

At a meeting of the Executive Committee of The American Legion in the Spring of 1931 Dr. F. O. Frederickson, Past State President of the Illinois State Medical Society, and then Department Surgeon of the American Legion, Department of Illinois, introduced and succeeded in passing a Resolution authorizing the organization of the Medical Commission of The American Legion. This Commission to consist of a physician representing each Post, District, County and Division; in other words carrying an organization similar to the plan of the State Department of The American Legion.

This Medical Commission of The Legion held a meeting in Peoria shortly after the Philadelphia meeting of the American Medical Association. The Contact Committee of the State Society was represented at that meeting. The Shoulders' Resolution was one of the questions discussed.

At the time the Shoulders' Resolution was published in The Bulletin of the A. M. A. it appeared to me to be an inconsistent policy for organized medicine on the one hand to fight the establishment of government bureaus and on the other advocate the establishment of a Bureau of Disability Insurance; it appeared inconsistent to decry state medicine and then advocate state disability insurance.

To me the passage of a Resolution as important as this was and then call on The American Legion to adopt is as a feature of its legislative program was both illogical and inconsistent. I believe the officers of the A. M. A. should have approached the officers of The American Legion before the Resolution was adopted and the two organizations working together could have agreed on a plan that both the A. M. A. and The Legion could get behind.

My experience with The Legion in the Contact Committees of organized medicine has been that the officials of The Legion will listen and look for guidance in medical matters from the established medical societies. The only information The Legion has been furnished until these Contact Committees in Illinois were meeting with them was that the A. M. A. was opposed to the building of more government hospitals and the reasons appeared to them indefinite.

In our Committees we are pointing out to The Legion the fallacy of supporting a plan that calls for the erection of hospitals to cost $900,000,000. The idea has been implanted into the members of The Legion that this wonderful expansion is to make it possible for ex-servicemen to receive hospital care without expense under the provisions of 202-10. Nothing is ever said to the ex-servicemen that this enormous building plan with the hundreds of millions for maintainance comes out of the taxpayers of the country and that every ex-serviceman is a taxpayer directly or indirectly; nothing is said to them about the waiting for admittance to these hospitals and the fact that the personal interest of their family physicians is lost. They are never told that the local hospitals found in all communities can render them the same service if given the opportunity. They are never told the danger of transportation in acute conditions and the mental anguish of being separated from their families or the expense added to the family if the ex-serviceman is accompanied by his family.

I believe the passing of the Shoulders' Resolution was more important from the fact that it aroused the interest of the average physician to the dangers of the vast expansion plan of hospital biulding and maintenance. I believe the final outcome will be a modification of the Shoulders' Plan which will give the ex-serviceman the opportunity of selecting his own physician and of being cared for in the already established local hospital where his own physician is personally as well as professionally interested in his recovery. I feel that a modification such as his suggested will get the backing of The Legion and in Illinois that means 80,000 members. I know that the Chairman of the Legion Rehabilitation Committee, Past State Commander Edward Hayes of Decatur, has always been friendly to the interests of the medical profession and I know that he wants to see the best service rendered to the ex-serviceman.

At the May Meeting of the Illinois State Medical Society in Springfield there will be a luncheon meeting of physicians who are ex-servicemen. That meeting will be addressed by Col. Hugh Scott, Manager of Hines Hospital, Dr. H. H. Shoulders of Nashville and Mr. Edward

A. Hayes of Decatur, speaking for The Legion. From the interest at last aroused among physicians I predict that luncheon meeting will be a large one.

THOMAS P. FOLEY, M. D.

NOTE: The Shoulders' Resolution is published in full elsewhere in Editorial Section of this issue. All physicians should read and digest thoroughly the Shoulders' Resolution. The proper care and hospitalization of ex-servicemen is of vital importance. The problem of care vitally concerns the ex-servicemen, the taxpayers and of course the medical profession.

The medical profession is not only willing but is anxious to see that service men get the most efficient care possible. This ideal service can only be accomplished when the ex-servicemen are allowed the opportunity of selecting his own physician and is allowed to be cared for in the already established local hospital.

THE DOCTORS WILL HAVE TO DO THE WORK OR IT WILL NOT BE DONE

January 15, 1932.

To the Editor: The proposition of handling pauper work, which has always been difficult enough, has been made additionally interesting in the last year in this state by two things, the general financial situation and the passage of the township pauper law. I know already of several plans for handling this practice, and it has occurred to me that a combination of some of them might be of some value, suggestively, to some of the county societies and their members. There is only one thing that all our advisers, lay, financial and professional agree on, and that is that the doctors will have to do the work or it will not be done. There is never any argument about that.

First, let each County Medical Society establish a list of fees for pauper work; for example, one-half the standard, established minimum fees charged for all sorts of work in the County.

Second, let the patient, and the supervisor or overseer of his township, choose his physician.

Third, have all fees for pauper work earned by the physicians of the County paid into the County Medical Society's treasury. Out of that money pay the County and State dues of each member, and the necessary running expenses of the Society. Contribute part of the necessary salary of a social worker to help decide who is entitled to pauper relief. The township or County should pay a generous part of such a salary, for a good deal of money as well as work could be saved in that way. Then pro-rate the balance, to each man who has done any work, in accordance with the amount of work he has done. Then let him do what he pleases with his money, keep it himself, or turn it into a general fund for the use and benefit of the society members. I know one small County Society which maintains a nice library, reading room and meeting room; another has over a thousand dollars at present unexpended in its treasury, and so on.

Such a plan, modified to suit each locality, will work because in various forms it is working—if the doctors on one side and the county authorities on the other side will play fair. (Incidentally, no plan will work for any length of time if the participants will not play fair.) It will leave the control of medical affairs where it belongs, with the medical men. It will provide that each man gets paid for what he does, and he can do what he pleases with his earnings afterwards. The help of an honest social investigator will materially cut down unnecessary work and unnecessary expense. And such a plan will tend to preserve the decent rights of the medical profession. The time has already come when this profession must stand up for its rights in the financial world or suffer the consequences; that time is here, right now.

Some one will raise this point: What if certain members of a society refuse to agree to such an arrangement? Those who care to do so can make an organization for this purpose within the Society, and leave out those who do not care to without in the least impairing the professional standing of anyone either in County or State Societies.

B. C., M. D.

UNPLEASANT EXPERIENCE WITH COLLECTING AGENCY

Effingham, Ill., January 7, 1932.

To the Editor: Several merchants, dentists and two physicians are having a rather unpleasant episode with the Birdsall Loan and Finance Co.

of Jacksonville, Ill. During December the representative visited us, and sold us on the proposition of letting them have a list of our accounts, that they would write the debtors one letter and then call on them personally and secure a judgment note for the amount of the account, the note to be with 7 per cent. interest. They would then discount our account 25 per cent. and pay us, when we were to send a receipt to the patient to cover the account in full. We were to sign no contract—and all we did sign was a small slip—which was represented as showing the list of accounts as correct.

Their first letter to debtors was a demand for money—the money to be paid to the collecting agency with a threat of sight draft on their bank accounts. The second letter was a notice of garnishment. No representative has called on the debtors and no report of collections has been made to us. Several of the men have written to them to stop their cheap collection agency tactics as they will antagonize all of the patients and the collecting agency replied that they would only stop if the commission was paid; that we have assigned the accounts and had signed a contract, etc.

Please give this matter publicity in your Journal for the information of other physicians.

THEO. F. REUTHER, M. D.

BOVINE TUBERCULOSIS NOW RARE IN ILLINOIS

The *Illinois Health Messenger* for January 15, 1932, says:

Tuberculosis in cattle was once a great source of danger to people in Illinois. This danger has been reduced almost to the vanishing point. People are protected from bovine tuberculosis in two ways. One is the pasteurization of milk and the other is the elimination of tuberculosis among herds through the testing of cattle and the slaughter of those which are infected. Both of these methods have been employed on a large scale in Illinois.

The result is that more than 3,000 cases of tuberculosis of bovine origin are prevented annually in the State. This at least appears to be a fact from the statistical evidence available. Bovine tuberculosis in humans is confined largely to children under 5 years old.

Twenty-five years ago, 6 per cent. of all deaths from tuberculosis in Illinois were among children in that age group. In 1930 only a trifle over 3 per cent. were among children under five. The actual number of deaths from tuberculosis among children under five years old has declined from about 450 to about 150 per year within a quarter of a century. Most of this decline has occurred during the last decade.

This indicates about 300 fewer deaths per year in a population much bigger than that of 25 years ago. Since for each death there remains 9 or 10 cases of the disease, the improvement includes the prevention of some 3,000 cases of childhood tuberculosis per year in Illinois.

A large percentage of bovine tuberculosis is confined to abdominal tuberculosis in children under five years old. Thus if control measures over bovine tuberculosis are effective there should be a significant decline in abdominal tuberculosis among these children. An examination of the statistics shows a very marked reduction. Twenty-five years ago abdominal tuberculosis accounted for 11 per cent. of the mortality from this disease among children under five years old. Ten years ago it accounted for 6 per cent. In 1930 abdominal tuberculosis accounted for only 3 per cent. of the mortality in this age group.

MATERNITY BENEFITS, SOCIALIZED MEDICINE

Dr. W. A. Dolan, of Fall River, says: "Maternity Benefits is paternalism, communism, Sovietism, and all the other isms of the kind condensed into one.

"It is the entering wedge for all the various forms of compulsory insurance, such as Health, Old Age, Sickness, etc.

"It is the camel's head in the tent, soon to be followed by the rest of the camel.

"It makes the white man the equal of the Indian, a ward of the State.

"The State has as much right to pay my grocery bill as to pay that under discussion."

THE SALES, CREDIT AND COLLECTIONS DEPARTMENT

Many proposals are coming to the fore whereby doctor and patient are to be financed in one way or another. They all represent a gearing of the profession to accord with obvious trends in the commercial world—with instalment buying, the mortgage system, and what-not.

One may, in time, hear one child inquire of another: "Are you paid for?"

Vehicles may traverse the town looking for "unlicensed" citizens and taking delinquents to the "pound."

It may come to pass that school entrance will hinge not alone upon vaccination but upon certification as to the medical sales status.

Perhaps there will be challenges at the polls on election days: "Have you paid your last doctor's bill?"

When, at the altar, the clergyman issues the old challenge as to why the sacrament should not proceed, there may some time step forward a process server with the doleful words: "The Bank of the Metropolis holds an unsatisfied note against this man for a mastoid operation!"

Efficiency and service demand no less, and brisk business men stand ready to serve us.

Tempora mutantur, etc.—M. J. & L. J. M. J.

Original Articles

THE MEDICAL SCHOOL—OBJECTIVES

IRVING S. CUTTER, M. D., DEAN
Northwestern University Medical School
CHICAGO

One organization there is that must be specifically charged with the development of methods of teaching—namely, the Association of American Medical Colleges. But this earnest group cannot achieve alone the optimum of results. Delegates to its sessions are Deans of Colleges, teachers in the preclinical sciences with a sprinkling of clinical teachers. Few of these are on the firing line of medicine; in daily contact with the public. It should be said in passing that the deliberations of the College Association have revolutionized for the better, teaching methods in practically all departments of medicine. Nevertheless the clinical surgeon who accurately mirrors the end results of training must lend his best thought to a continuing program of teaching advance.

Medical education has been viewed for too long a period as the particular job of those who teach. This view falls far short of the necessities of the situation and the reason is not far to seek.

During the past quarter of a century, American medical schools have progressed at a stupendous rate in point of physical equipment and endowment. It is, however, fairly self-evident that the product of our schools, measured in terms of accomplishment, can scarcely be said to justify, as yet, this enormous outlay in buildings, equipment and endowment. It is generally conceded that the rate of physical expansion has far exceeded growth of planning; of the development of method, with sound principles of teaching. Our rush to acquire magnificent physical plants—some perhaps loaded with an annual operating cost that is staggering—has been illogical. Our knowledge of how to build, what to build and how to utilize what we have built, has not kept pace with our building. Some schools are fortunate in that plant accretions have come gradually, permitting a carefully thought out integration of each new unit with the established whole. Indeed in some few American Universities the building program has so far outdistanced educational development that there is much scrambling for some patent scheme of education that will close the gap.

We cannot explain away our dissatisfaction with our present day methods on the ground that there is too much to do; that the mass of material to be mastered has overwhelmed us. Rather is it a lack of perspective in our view that prevents organization of the curriculum in such a way that the student shall be constantly more alert, more keen, more enthusiastic and less bewildered, less mentally choked by the necessity of the mastery of non-essential detail.

Were it possible, a reversion to the preceptor system would cure most of our pedagogic ills, for after all, our great surgeons of today are those who have received individual instruction at the elbow of a great surgical teacher. So-and-so was a pupil of Halstead, so-and-so a pupil of Dever, of DeCosta, of the Mayos, of Cushing, students who lived in the atmosphere of surgery with a master. Perhaps we cannot approach this in our present scheme of undergraduate and graduate training. We can, however, give thought to the problem and muster the interest of this great group.

In our consideration of the future of American medicine and the role of education, to assume that the general practitioner is to be eliminated from the picture is unwarranted and unsound and based upon an insufficient knowledge of social trends. Whether the American home is destined to survive or not is beside the question, but the American Medical profession completely, totally and sharply segregated into special groups would promptly invite into the healing ranks numerous unborn healing cults, as well as stimulate those existing cults that have gained considerable headway. We must, therefore, postulate at the outset a training of the undergraduate for the general practice of medicine and surgery that will insure competent and skilled care for at least two-thirds of our population. We cannot view the problem of the future without a careful study of social trends and economic tendencies. New lines of cleavage are appearing here and there in our social fabric, while economic principles, accepted for generations, are found wanting under the critical application to modern conditions. Unless changes that are occurring in our social and economic affairs are anticipated, medicine will tardily lag where it should lead. The bur-

den falls first upon our educational institutions where we assume that new ideas, are not only born but find serious students and receive serious consideration.

Every worker in the field of medicine senses on the part of his public a feeling of unrest, which in some quarters amounts to genuine dissatisfaction as evidenced by the numerous fault-finding magazine articles, largely from lay writers. He senses, too, his own inefficiency, his own inability in the management of numerous problems that come to him. Some of this ineffectualness arises from the fact that no phase of medicine is an exact science. On the other hand, a part of his inability to cope with every situation is due to his training and this it is that constitutes the problems which the American College of Surgeons can help to solve.

Medical Schools are not factories turning out a standardized product. There are no moulds or dies which stamp true to pattern; hence there is no one best plan of medical training. Schools are endeavoring with a superior type of American youth, to preserve and stimulate individual thinking and to offer advantages for self-education. We have at least taught the majority of our students that the undergraduate course does not and cannot train them for the definite practice of general surgery. Most students now realize that training for surgical practice requires several additional years of intense application under a wise master. Advances in medical education to be permanent and worthy cannot come as the result of a Crusade; a whirl-wind campaign with a clean-up at the end. On the other hand, careful, accurate, painstaking studies will avail much.

The American College of Surgeons has accomplished a huge task in accrediting and standardizing hospitals, surgical procedures and the like, but these worthy objects are but the shell or husk of the vital problem; namely, the future development of American medicine. Picture if you will each of our hospitals a teaching center with medical students, perhaps, certainly internes, staff, nurses and personnel, a center not only for professional, but lay education with definite objectives. How many of our hospital staffs accepting, nay demanding, internes—teach? The interne period to the student is or should be the most valuable period of his life, and yet are the staffs of *all* of our hospitals rising to the rare opportunities which are theirs? To fire a staff with enthusiasm for teaching is ofttimes as difficult as to reanimate the dead. Sound, accurate, thorough and interesting teaching of internes, is the obligation of every staff accepting them.

On the whole, it is my firm belief that the teaching of surgery in American medical colleges is probably better done than is the teaching of medicine. Possibly this is due to the reflex interest of the student, his disproportionate admiration for the brilliant surgeon, and his over-emphasis upon things surgical. Nevertheless the teaching of surgery is not good enough, and while a generation must elapse before we can demonstrate our failure or success, we of the present day must take the long focus view of things; we must think "long thoughts."

303 East Chicago Avenue.

THE HISTORY OF OBSTETRICS

HENRY BUXBAUM, M. D., F. A. C. S.,
Instructor in Obstetrics Northwestern University School of Medicine,
CHICAGO

It is difficult for modern imagination to visualize the status of the obstetrical art during the past ages. Fancy a world where all the modern facilities for the parturient were not available, nor the revelations of the microscope, the stethoscope, or the obstetrical forceps as yet made. Imagine a lying-in case attended only by a midwife and she usually of low caste, and physicians, such as they were at that time, not allowed in a lying-in chamber under penalty of death, and the only operations known were of a destructive nature. Such was the status of the obstetrical art before the time of Hippocrates in 400 B. C. The writings on the history of obstetrics are voluminous, due largely to the fact that this particular branch of medicine is composed of five large subdivisions, namely, conception, pregnancy, labor, lactation and involution, each of which is replete with ancient history and folk lore. No other subject in the entire field of medicine is associated with as much romance and historical interest as is obstetrics. It has been, because of its peculiar nature, often confused with fanaticism, mysticism, tradition and a good deal of superstition, much of which has been transmitted down to the present day. Many of

the superstitions now prevalent amongst the ignorant of today had their origin in the dark ages. This is readily comprehensible when we take into consideration the history of its foundation and its intimate relation to the advance of mankind throughout the ages. Such superstitions as prenatal influences, the causes of birthmarks and naevi on the new born baby, the predetermining of the sex of the unborn child, and many others too numerous to mention, had their origin in these primitive days. Each generation refuting some of the superstitions of the preceding generations and adding others in their stead. In this regard it is interesting to note that as late as 1522 one Dr. Wertt of Hamburg put on a woman's dress to attend and study a case in labor and was unfortunately detected, for which he was promptly burned at the stake. Obstetrics since its earliest inception was conducted entirely by midwives or even untrained women and it was generations before any male was allowed to enter a lying-in chamber, and then only at the request of the midwife in attendance. This practise is still in vogue in many places, in Africa, Asia, Europe and even in America among the foreign born, negroes and native Indians. I will attempt to classify and summarize the progress of obstetrics in epochs from the earliest historical data on the subject to the present date. For convenience sake let us divide this into two great divisions, the empiric or natural epoch and the scientific epoch.

The Empiric or Natural Epoch. In this empirical epoch there are three well defined eras marking the slow development of the obstetrical art. Notwithstanding the advance made in culture and civilization at this time, the advance in this art was relatively slight and mediocre. The first era might well be termed the primitive or intuitive era of which we have very little historic record as this period existed long before biblical times. The necessary aid was rendered by untrained women who knew intuitively what to do, an atavistic trait simulating animal instinct. Abortion was practised even at this early day, by external and internal manipulations for various reasons. If, for any reason danger was to be expected to the mother, or an increase in the family undesirable, there were authentic instances where abortion was resorted to. Sort of a primitive birth control. Labor in itself was usually a normal process due to the fact that the women lived almost always out of doors, and in a good measure due to the reason that there was no intermingling of races or even tribes. This of course tended to eliminate any complications resulting from contracted pelves, for even if the tribe was small in stature the husbands would be the same size, and naturally the women's pelves would be in proportion to the rest of their bodies, and the fetuses would be in proportion to the size of their pelves. Labor was presumed to be a voluntary act on the part of the fetus and the character of the labor was presumed to depend on the disposition of the child. So, therefore, any child so perverse as to cause any change in the normal act of labor deserved to die, as did a mother who bore such a child. As to labor itself, manual aid was rendered by pressure on the abdomen from above or shaking the woman. The women were all delivered in a squatting position on the ground, and the perineum was protected by sitting on a small mound of sand. The third stage of labor was managed by several different methods. It some places the placenta was allowed to be expelled with the fetus intact, and then cut, dried and preserved. In other places the cord was severed as soon as the baby was expelled, and then handled by three different methods. It was either cut off, bit off, or a string was tied to the cord and the other end of the string attached to the big toe of the patient, who by gentle traction pulled out the placenta.

The second era of the empirical epoch might be known as the religious era, because during this period priests assumed the duties of physicians and were even called upon to assist midwives during difficult deliveries as mentioned in the old testament. This era was at its height about 1500 B. C., as told in the Ayur Veda of Susrata, called the Book of Life of India. This book, it is interesting to note, was said to have been written by the great Brahma himself.

This period was further emphasized by the erection of numerous shrines to various Deities, where the sick and disabled went for assistance and succor, and whatever fee they voluntarily contributed was considered a gift for the Gods. In Egypt the God of healing was Imhotep, and in Greece was Aesculapius who with his daughters Panacea and Hygeia were looked on as the main

preservers of the health of the masses, and Roman mythology is replete with similar Deities.

Cephalic version is now mentioned to correct the position of the child, for at that time the only favorable presentation conducive to the life of both mother and child was cephalic presentation. Cesarean section was done only post mortem. If a fetus died in utero it was either cut up and delivered, or allowed to remain in the uterus to decay and rot, and would be spontaneously expelled subsequently by the uterus which probably was not a bad procedure. The tardy placenta was removed by either pressure, shaking or vomiting. Cleanliness was somewhat established by washing the external genitalia in running water and annointing with banana oil, which contains about 60% alcohol. The puerpera were isolated for about two months or longer. The most outstanding advances made in this period were the invention of the cephalic version, allowing a dead fetus to be expelled spontaneously, and the fact that priests because of their greater learning were called on as consultants in difficult deliveries.

The third and last era of this empiric or natural epoch might be called the progressive era, because rapid strides were made in putting the obstetric art on a more scientific basis, and thereby paved the way for the many discoveries that were to follow. It begins with the teachings of Hippocrates in the year 400 B. C. The care of the child bearing mother is still in the hands of midwives, the physicians being only summoned after the death of the fetus for the purpose of cutting it up and removing it. Hippocrates, known as the father of medicine, speaks of podalic version even at this early date. The obstetric chair was introduced at this time, which was a great advance over the old method of delivering the women on the ground. This was an ordinary chair with a hole cut out of the seat, and the midwife would necessarily have to kneel in order to successfully deliver the patient. The physicians of this period were somewhat handicapped by their lack of knowledge of anatomy and physiology, and therefore advancement was slight, the only progress being made was in the perfecting of mutilating instruments and technique. Shortly before the Christian era, Greek physicians perpetuating the work of Hippocrates were chiefly Celsus, Galen, Soranus, known as the father of gynecology, and later Vesalius, who contributed mostly to advancing the science of comparative anatomy. Podalic version was now being done more often, and extraction of the fetus after version was mentioned. A vaginal speculum crudely devised, was introduced by Soranus.

But sad to say, the obstetric art was at a standstill during the third and fourth centuries when the Roman Empire was in its ascendency, and when Roman culture succumbed to luxury, gluttony and licensure, and after the fall of the Roman Empire all Europe was in chaos and advances in everything scientific, including obstetrics was relatively slight. There was some culture fostered and maintained at this time by the Arabs, but because of their nomadic tendencies nothing permanent was left. During the middle ages between the sixth and the sixteenth centuries darkness still prevailed in Europe, and the teachings of able men were laid aside, and were replaced with ridiculous fanatic theories. In the middle of the thirteenth century, Bishop Paulus of Spain was accredited with performing the first cesarean section on a living woman.

The notable advances made in this period were the teachings of Hippocrates, the performance of podalic version and extraction after version, the founding of the Galenic school of medicine by Galen, the introduction of the vaginal speculum by Soranus, and the confining of the gravid woman in a standing or kneeling position, or in a obstetrical chair.

Scientific Epoch. This great epoch opens with the rediscovery of podalic version by Ambrose Pare, the great French surgeon, in 1550. Among other things that Pare contributed to the medical profession in general and the obstetrical field in particular was the founding of the first school for midwives in Paris known as the Hotel Dieu. One of the first graduates from this institution was a midwife by the name of Louise Bourgeois. She was the midwife by appointment to the royal house of France, and because of this naturally incurred the enmity of the practicing physicians of her time. She had the honor to deliver all the members of the royal family for which she was well repaid. Among others that she had the honor to bring into this world was Le Dauphine, the first male child in a number of years in the

royal family who was in direct line for succession to the throne of France. She later had the gross misfortune to have a princess of the royal family upon whom she was in attendance die during labor, and was tried by a jury of twelve physicians. She was subsequently found guilty of gross negligence in her management of this case by this august body of her peers, and was denied the privilege of further officiating at confinements. In retaliation she wrote a pamphlet she called her Apologia, in which she denied the allegation as set forth in the indictment. She also called their attention to the fact that probably none of the physicians who tried and condemned her had ever seen a woman in labor, which was more than likely true. She claimed her patient died from cancer, but from the available data on this controversy as viewed in our present day knowledge it would seem as if this death was due to a retained placenta followed by infection. In any event this Apologia of Louise Bourgeois is an interesting document and a classic in sarcastic repartee. Suffice to say she did not practice again. France was the center of obstetrical research and progress, led by such an outstanding man as Mariceau. Incidentally, it was around this time in 1628 that Wm. Harvey wrote his epochal treatise describing the correct circulation of the blood, and a few years later in 1632, Loewenhock invented the first microscope. This brings us to that interesting event in obstetrical history, the invention of the obstetrical forceps and its relation to the notorious Chamberlain family, to which I will devote a separate chapter.

History and Evolution of the Forceps. The history and evolution of the forceps is no doubt the most interesting and fascinating reading in the annals of obstetric literature. Up to this time, as I have attempted to point out, the only advances or additions made in the obstetrical armamentarium was the improvements made in mutilating instruments and filets. It probably seems peculiar that the obstetrical forceps were so long in coming, but this is readily realized when we take into considration the fact that all deliveries were conducted by sages femme or midwives, and physicians were not called in until they were absolutely required. The history of the discovery of the forceps is so intimately interwoven with the geneology of probably the most notorious family in medical history, that it will be impossible to separate them and therefore I will cite the history of the discovery of the forceps with a chronological review of the Chamberlain family. This family kept their invention secret for over 150 years for a purely selfish motive. Whenever any of them were called in consultation to deliver a stubborn case they would not permit anybody to observe the performance, as they were afraid that somebody might discover their secret and duplicate their forceps. They charged an exorbitant fee for their work and feared competition. The entire family also had a peculiar knack for delving into many non-medical ventures, with always the same thought uppermost in their minds, self aggrandizement. They also had considerable political power due to their appointment as obstetrician to the Queen of England. Using this as a leverage they engaged in innumerable political disputes and controversies. They also recommended to Parliament numerous reforms, none of which were practical and were therefore doomed to failure. The only thing they recommended that eventually was successful was the union of Scotland and England. In short they were considered by their contemporaries as quasi charlatans.

About the year 1569, according to Aveling, a Huguenot by the name of William Chamberlain was forced to flee from France because of a religious war raging there at that time. Some of the Huguenots fled to South Africa and started the Boer colony, which was later ruled by Oom Paul Krueger, and the balance fled to Southampton, England. Among the latter was William Chamberlain, his wife Genevieve, his two sons Pierre and Jacque, and his daughter Jean. After landing in Southampton, they discovered some error in the baptismal record of the two boys, and they were both named Pierre or Peter. So as to be able to distinguish between his two sons the father called them Peter the Elder, and Peter the Younger.

Peter the Elder lived from 1560 to 1631, and he is generally credited with being the inventor of the famous Chamberlain forceps. He died in 1631 and left no children. Peter the Younger was born in 1572 and died in 1626. These two brothers having the knowledge and ability to deliver a live child from the parturient canal of a mother by means of a metal instrument were necessarily in great demand. The other physicians in order to compete with them, first tried

to discover their secret, and failing this had to resort to many different types of filets and appliances which were obviously unsuccessful. Peter the Younger left one son who practiced medicine, and among other things he fell heir to was the Chamberlain forceps. He was also named Peter and lived from 1601 to 1683. He perpetuated the Chamberlain tradition and when he died passed the secret and the forceps on to his sons, of which he had three, all physicians. John, the oldest, was an out and out quack, Paul, who sold patent medicines and belts, and Hugh who was slightly more orthodox than his brothers inherited not only the forceps, but also the family flair for creating trouble and interfering in other people's affairs, political, private and otherwise. Due to his prestige in the court of England he tried to organize the midwives into a society, electing himself president, and making it obligatory for them to call him in consultation at the least sign of dystocia. He was partially successful in this, and became extremely well hated by his medical confrerees who brought up charges against him before the medical society. When he died he left one son who was a physician, and to whom he bequeathed the Chamberlain forceps. Hugh, Junior, as he was named, was born in 1664, and died in 1728. He was the last male descendant of the Huguenot William Chamberlain, who practiced medicine. Hugh, Junior, following in the footsteps of his notorious ancestors, got himself into many difficulties, mostly financial, and later in his checkered career was instrumental in wrecking a bank in England. England immediately became too hot for him and he fled to Holland, and needing money badly he sold his precious secret but not the original forceps to a Dutch obstetrician named Roonhuysen for seventy-five hundred dollars, who in turn sold part of this valuable instrument to anybody having the price, but would not disclose the entire secret. He sold only one blade to be used as a vectis, thereby adding fraud to infamy. Previous to absconding to Holland, Hugh went to France and tried to sell his instrument, and there met Mariceau, who agreed to purchase his instrument if he could deliver a woman with a contracted pelvis from below on whom he had intended doing a cesarean section. When she went into labor Hugh Chamberlain was called and he tried strenuously for three hours to deliver the woman with his forceps from below without success, so Mariceau refused to buy his forceps. The patient and her baby subsequently died.

The original Chamberlain forceps was found later in an abandoned house in Essex, England, about 1812, during some excavation work on a building where Hugh Chamberlain once resided.

As I have previously mentioned, the other physicians during the 150 years that the Chamberlains were in power, tried to ascertain or duplicate their precious secret, but it was not until 1717 that Jean Palfyn, a Belgian, demonstrated his instrument, which consisted of two blades that did not cross and had no lock, but were held together by strings. Palfyn after great physical difficulty succeeded in presenting his instrument and was officially credited with being the inventor of the forceps. His instrument was manifestly inferior to the original Chamberlain forceps. Levret, a Frenchman, in 1747 modified the forceps by adding the pelvic curve, crossing the handles, and utilizing a so-called French lock, which somewhat resembled some of the salient features of the original Chamberlain forceps. In 1752 Sir William Smellie built a pair of forceps with a fenestra and short thick handles. In 1848, Sir James Y. Simpson of London lengthened the handles to keep the hands away from the rectum, and used a sliding English lock. In 1877, Tarnier described the original axis traction forceps, for application with the head at or above the inlet of the pelvis, a maneuver in disfavor today. In 1915, C. Kielland devised a forceps with no pelvic curve, extra long handles and a flat sliding lock, that could be used for rotation as well as traction. No other forceps in obstetric history has caused nearly the amount of comment and discussion as the Kielland forceps, some critical, but mostly favorable. De Lee about this time modified the Simpson forceps by increasing the cephalic curve, so as to produce less lateral pressure associated with longitudinal lengthening of the head. He also made several changes in the handles making the blades lighter and more easily sterilized. A. H. Bill of Cleveland in 1919 described a modification of the Lueken McLane forceps which consisted of a traction appliance attached to the base of the solid blades for rotation and traction in occiput posteriors.

Barton in 1928 described his forceps with one hinged blade available for high rotation and axis traction, and in 1929, E. B. Piper described a forceps with an angulation in the shank for delivering after coming heads in a breech presentation.

I have by no means attempted to name or describe all of the forceps that were perfected and used in the past, as the different variety of forceps that had been produced were legion, in fact every obstetrician of note in the past would add some slight modification to the forceps in vogue at the time and attach his name thereto. All I have attempted to do was to describe the outstanding forceps of their time with their distinguishing features. These standard forceps combine practically all of the various modifications and features of nearly every forceps devised and used by physicians during the past centuries.

So much for the invention and development of the obstetrical forceps. France still continued as the pace setter in the world of scientific research, but other nations were beginning to apply themselves to improving the art of obstetrics. In Germany during the middle of the 18th century there became known a midwife by the name of Justine Sigmundine who was midwife to the court of Brandenburg. Among other things she described a double manual internal version that is still mentioned by De Lee in his text-book. In England, there were Sir Fielding Olds, Thomas White who was really the first man to describe what we now call the Fowler's position; Sir William Smellie who as previously stated perfected a short handled obstetrical forceps and many other reforms, notably with Mariceau described the treatment of the after coming head, and many others. This was about the time that the Hunter brothers, William and John, were applying their brilliant minds to the advancement of the scientific side of medicine and obstetrics. They did quite a little research in anatomy with special reference to the fetal circulation. The end of the 18th century marks the time of the founding and establishment of chairs of obstetrics in various universities, notably in London, Dublin, Edinburgh and in Italy. The end of the 18th century might be considered as the end of the first phase of the scientific epoch.

The next period could well be called the physiological era for it was now that there was a complete emancipation of obstetrics from surgeons with their impulses for surgical or instrumental interference, and was replaced by rational physiological obstetrics. It begins about the year 1800, and we find obstetrics now considered not only an art but a science as well, largely due to the splendid pioneer work of such men as the Hunters, Smellie, Mariceau and D'Outrepont. Cesarean section was somewhat hampered by the public ravings of Sacombe, a Parisian charlatan. Like many other things in the field of medicine he unwittingly benefited the cause of cesarean section by calling the attention of the profession to some of its defects, with the result that there were formulated more rigid indications and requirements for its performance. The frequency of pelvic deformities was recognized in northern Germany and England and so external version was recommended by Wigand. In 1819, Laennec, a Frenchman, invented the stethoscope which proved a tremendous advance to the entire field of medicine including obstetrics. This period marks the passing of the last of the celebrated midwives, Marguerite La Marche, Marie La Chapelle and Marie Boivim, and also the demise of the obstetrical chair, as physicians by this time were following the technique of Mariceau and delivering all their patients in bed.

The greatest single aid to the parturient occurred in the perfection of sulphuric ether by the American dentists Jackson of Boston and his pupil, Morton, in 1844. Ether as an anesthetic was also described independently by Long at the same time. But it was not until 1847 that anesthesia was used during a delivery and then in the form of chloroform by Sir James Y. Simpson of London.

Cesarean section was still done with reluctance because of the enormously high maternal mortality, due mostly to puerperal fever, and this operation was looked on as a very dangerous procedure until Porro in 1846 described an operation bearing his name in which a cesarean section was immediately followed by a supracervical hysterectomy, which operation became widely employed with a marked decrease in maternal deaths. In 1860, Credé described his technique for management of the third stage of labor, and in 1880 he called the attention of the world to the prophylactic treatment of ophthalmia neonatorum, recommending the use of silver nitrate in the baby's eyes soon after birth. Around the mid-

dle of the 19th century the world took cognizance of the scourge known as child bed fever, and numerous investigators tried to solve this serious problem, a problem so vital, so dangerous that it was creating havoc in the medical profession, and threatened to set the science of the obstetric art back several centuries, so therefore I will attempt to describe the advances made in solving this problem in as brief a manner as is commensurate with the importance it deserves.

History of Puerperal Fever. I fully realize that there is a great deal of controversy about to whom belongs the credit for first describing the cause and prevention of child bed fever, and after having made a somewhat critical review of the past literature dealing with this subject, I am personally convinced that full credit should be given to a Hungarian physician by the name of Ignatz Semmelweis. While several other men before him appreciated the contagiousness of puerperal fever, it remained for him to find the actual etiology of this condition and he forthwith dedicated his life and reputation to preach the gospel of personal cleanliness in obstetrics. Before his monumental work on this moot subject, it was common knowledge in Vienna that of the cases delivered by the physicians there was a maternal mortality of approximately 10%, while of those cases delivered by the midwives there was a maternal mortality of only 3%. Therefore, the public being well aware of this situation naturally were greatly alarmed when told they were to be delivered by a doctor, preferring the midwives. So Semmelweis decided to study this problem, and immediately noticed that the doctors and students often came directly from an autopsy or dissecting room to deliver a baby, and following these cases further also noticed that these were the cases that mostly always ran the temperatures. Semmelweis had a roommate named Professor Kolletschka who was a pathologist, and somewhere about this time while doing a post mortem, a student pricked his finger with a needle from which he developed an infection and subsequently died. Being a true scientist he left instructions that his body be posted, preferably by his friend and roommate Semmelweis. Now Semmelweis had already notice the similarity of the courses of the diseases run by his friend, Kolletschka, and those unfortunate women dying from child bed fever, and at autopsy substantiated these clinical findings. So therefore he made a statement in which he said that puerperal fever was caused by contaminating the external genitalia of the parturient with decomposed animal matter brought there by the hands of the doctor, student or nurse. He also appreciated the fact that this contaminating matter might be carried there by the air. If we substitute the word bacteria for decomposed animal matter his definition would be essentially the same as it is today. He immediately advocated the unheard of procedure of insisting on personal cleanliness. He also recommended that anyone leaving an autopsy or dissecting room to confine a woman should first change his clothes, then scrub his hands thoroughly, and even went so far as to advise cleaning their finger nails. In those clinics where this procedure was carried out the maternal mortality fell considerably, even below that of the midwives. But on the other hand most of his contemporaries ridiculed his ideas, in fact, they treated him with disdain and his views with sarcasm. He was abused and maligned, he lost his assistantship in Vienna and later died a wretched pauper in an insane institution. It was not until after his death that the world at large really appreciated what this man had done for humanity.

Of course, a condition as devastating as puerperal fever was recognized and appreciated before Semmelweis' time, but the majority of men until then still believed in the old dictum set down by Hippocrates, that child bed fever was due to the suppression of the lochia, thereby mixing cause and effect. Still other men believed that this condition was caused by absorption of the milk, due no doubt to the milky like discharge coming from the genitalia of these women, instead of the normal red lochia. So therefore, I repeat that Semmelweis by finding out the true cause of puerperal fever, especially before the days of bacteriology, is deserving of the greatest amount of credit, such as it is.

About 1827, Robert Collins, who was master at the Rotunda Hospital at that time, by close observation recognized the contagiousness of puerperal fever and tried various methods to eradicate this condition or at least limit its spread at his institution. He advocated washing the walls, floor and ceiling of the lying-in chamber with chlorate of lime, and using paper sheets on the bed instead of linen, using clean paper

sheets for every delivery. By these preventative methods he was responsible for the radical lowering of the death rate at his institution. About 1840 Alexander Gordon of Aberdeen also tried and did succeed in decreasing the mortality rate among expectant mothers by the employment of similar antiseptic measures. In 1842 our own Oliver Wendell Holmes, poet and obstetrician of note, published an article in a New York medical journal relative to the contagiousness of puerperal fever recommending several radical reforms in the care of the parturient, for which he was vigorously criticized by his contemporaries, Hodge and Meigs. But it remained for Ignatz Semmelweis to give to the universe the true cause of child bed fever in 1847.

Suffice for puerperal fever. The next and final period in the scientific epoch may be correctly labeled the antiseptic or aseptic era, for it is during this period that attention is finally being placed in finding out the specific etiology of disease, its prophylaxis and its cure.

About the middle of the 19th century, Pasteur did his epochal work establishing the exciting cause of most all diseases. He applied himself to the study of bacteriology and was the first individual to correctly describe the morphology of bacteria and their intimate relation to disease. A little later Louis Jenner applied this knowledge in a more practical and spectacular fashion. Shortly after this Koch formulated his famous four postulates dealing with the verification of the bacteriological cause of disease. About 1870, Lord Lister of London recognizing the value of the findings of Pasteur and attempting to apply their discovery to a more practical solution of the problem met with the same short-sighted resistance or opposition as did his predecessor, Semmelweis. He was also furiously opposed by his own countrymen, and by some of his colleagues abroad. I am glad to note that it was in America that he received his greatest recognition. What he mostly did was to correlate and utilize the scientific researches of all his predecessors, especially Pasteur and Koch, and apply their findings clinically. He mainly advocated spraying the operating room and everything that may come in contact with the patient with a solution of carbolic acid. While this routine led to a good deal of controversy it nevertheless paved the way for our modern rigid system of asepsis, which has its greatest field of usefulness in domain of obstetrics. Lord Lister, fortunately before he died, received the plaudits and recognition he so richly deserved from the world at large, and from his colleagues in particular.

In conclusion allow me to state that I have tried to present the most notable advances made in the art and science of obstetrics during the past centuries in as concise and brief a manner as possible. I also tried to divide and identify the progress and evolution of this ancient and honorable art with the period in which these changes took place, associating it with a slight reference to the historical happenings of the day. I believe that we have a number of obstetricians living today who are of the same calibre as the great men in the past, and with the greater amount of facilities now at their command we can look forward to the future with encouragement. And while the giving of birth is still a somewhat hazardous procedure, from our knowledge of the extremely slow advance of the obstetrical art in the past, this enormous sacrifice of young mothers on the altar of negligence and indifference, we feel certain will be eventually remedied.

Our knowledge of obstetrics today is a correlation or I might say a condensation of all the knowledge and wisdom given forth by the great thinkers in the past generations, and the present still finds the studious and the concerned striving to perfect the science and art of obstetrics in all its branches, *i. e.*, the teaching of, the hygiene of, the physiology of, and the technique of caring for the women during conception, pregnancy, labor, lactation and involution.

In closing, I can only hope that the coming generations may benefit by our experiences as we have benefited by the experiences of those generations preceding ours.

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THE VALUE OF CLIMATE IN THE TREATMENT OF TUBERCULOSIS*

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Not so long ago the newspapers printed a brief statement by some anonymous government

*Address before Valmora Sanatorium dinner, Chicago, Ill., October, 1931.

physician to the effect that climate is valueless in the treatment of disease. The same papers announced in large headlines that an ex-Secretary of the President's Cabinet, on his way to serve his sentence in an eastern Federal prison for bribery, had been found to have tuberculosis and was to be transferred to the New Mexico State Prison, so that he might enjoy the benefits of climate.

There has been much insidious propaganda quietly foisted upon the public, to the effect that climate is no longer desirable in the treatment of disease.

It is my intention this evening to talk a bit about climate, and its place in the treatment of disease, and, particularly, in tuberculosis. Tuberculosis is a disease of civilization, and in spite of our anti-tuberculosis campaign it is still the most prominent cause of death between the ages of twenty and forty years—the most productive period of man's life. It has been with us since before the dawn of history.

The skeleton of a young man about twenty years of age has been found in a grave of proved Neolithic or Stone Age which was from 7000 to 3000 years before Christ. This skeleton is the oldest case of Pott's disease, or tuberculosis of the spine, known.

Coming through the ages we find the evidence of tuberculosis disease in the Egyptian mummies that lived during the reign of King Tut-Ank-Amen and the Pharoahs.

In a later period, one of the Greek physicians, a contemporary of Hippocrates, the Father of Medicine, who lived 460 to 370 years before Christ, writes "If I had the consuming disease, I would plant my tent on the southern slope of the mountain, would get myself a goat and rest there." And let me say that very little has been added to this through the centuries. The tent means pure fresh air and rest; the southern slope means altitude, sunshine, and fresh air; the goat means milk and good food—and that is practically all one knows about the treatment of tuberculosis to this very day.

It is true that we now use lung operations, such as artificial pneumothorax, by which the lung is collapsed with gas; and the phrenic exaeresis operation, by which we cut and remove the phrenic nerve on the affected side, thus paralyzing the diaphragm and resting the lung; and, as a last resort, we use the thoracoplasty operation, by which all of the ribs on the affected side are removed and so, by collapsing the chest wall, rest the lung. These are radical measures, however, and are unnecessary in the great majority of cases if the diagnosis is made early enough.

The three main fundamentals of the modern treatment of tuberculosis today remain as they were in the time of Greek physicians: namely, rest, good food, and climate. Climate, starting with the ancients, is the oldest form of treatment that has withstood the coming of scientific medicine.

The impetus given to the study of tuberculosis by Dr. Koch's discovery of the tubercle bacillus in 1882 was widespread. During the past fifty years the cold analytical light of science, and its research work, has been thrown upon the question of climate and upon its value in the treatment of disease.

Dr. Gardiner, a pioneer in tuberculosis work, has for more than thirty-one years been calling attention to the strikingly low number of tuberculosis cases and to the low mortality rate among the resident population of health resort towns in the high inland plateau regions in this country, which he attributes to the low relative humidity.

Dr. Jaquerod of Lysin, Holland, writes in a recent booklet: "When we studied the distribution of tuberculosis in different countries we discovered that the disease was almost unknown among the inhabitants of certain mountainous regions where the climate was cold but very dry and sunny. From that time consumptives were sent to the mountains, and their stay produced so remarkable an effect on many of them that the cure of high altitudes was soon accepted in the profession.

As a result of the research work which shows the value of climate, public opinion, as is usual, went to the extreme of sending West every individual with lung trouble and tuberculosis. No thought was given to the stage of the disease the patient was in, finances were not considered, and many a sorry unnecessary picture of starvation and privation was seen in the friendly Southwest.

When our x-ray technique became better developed, the doctors were able to detect cases of early healed tuberculosis in those that never knew they were sick and had never left home. As a result of this and of the fact that many active cases refused to leave home, or for one reason

or another were unable to leave, it was deemed advisable to build sanatoria at home, and it wasn't long until there were political and private institutions all over the United States.

The time wasn't long until the opinion was prevalent that climate was unnecessary and absolutely valueless. The unfounded opinion was widespread that once a patient goes West he must remain West. At the Valmora Sanatorium, which is the oldest sanatorium in the state of New Mexico, you find records of graduate after graduate who are living in all parts of the world except the tropics.

It is true, that there are people living and working in the Southwest who cannot live anywhere else. The disease had such a hold on them that it was incurable, but in the favorable cool sunshine and dry climate of the Southwest they are still alive, living active and useful lives, but if they had remained at home, they would have been dead years ago. However, if any of these patients return home for a visit for any length of time, they undergo another relapse. Yet, in spite of these cases, the antagonists of climate claim that climate has no value. And so, until recently, the beneficial effect of climate has been unduly minimized.

The pendulum of public opinion and of the profession swung from one extreme, where climate was a panacea and cure-all, to the other, where climate had no value whatever. During the past few years the pendulum has been on its way back, and those of us who are practicing in the Southwest hope to keep the use of climate within rational bounds. That this is difficult today is shown by our present vitamin hysteria. Even the medical profession of Europe is not unwilling to earn an extra dollar by advising us in magazine advertisements to use So-and-So's vitamin yeast for everything from dandruff to the seven-year itch.

The first important factor in the climate of the Southwest is the great amount and quality of the sunshine. That the rays of the sun are healing is disputed by no one today and in the treatment of tuberculosis sunshine is particularly valuable. In bone, throat, and intestinal tuberculosis it is almost a specific. We can cure cases today that before the use of sun treatment were considered hopeless. That in most of the United States there is not sufficient sunshine is shown by the records of the United States Weather Bureau, and the manufacturers attempt to sell canned sunshine with their sun-lamps and their irradiated food stuffs or bottled sunshine. The records of the Chicago Health Department show that in all of the winter months little if any of the curative rays of the sun can penetrate the veil of smoke and dust that hangs over Chicago.

In the Southwest the sun's rays are powerful, because of the altitude; there is approximately one mile less of atmosphere for the rays to penetrate and be absorbed by. Next, the sun shines most every day. During the past year there were only six days when we did not see the sun. And finally, the temperature all the year around is so comfortable that it is a pleasure to remain out of doors in the sunshine. Our patients who are taking heliotherapy lie out naked in the sun all year around.

The absence of these rays in the Chicago sunshine is one of the reasons given for epidemics of colds, influenza, and pneumonia in the city each Spring. We do not have these epidemics in Valmora; in its twenty-seven years of existence there has never been one single case of pneumonia develop in the sanatorium.

The second important factor in the climate of the Southwest is the altitude. We are approximately one mile higher than Chicago. This altitude improves anemic conditions by causing an increase of the red blood cells of the body. It increases the resistance to disease by causing an increase in the white cells, and, according to Sir Stuart Tidy of London, altitude with its lessened barometric pressure favors healing of the lung because of the lessened tearing of the scar tissue that is forming.

And third, the low humidity, the coolness, the pureness of the atmosphere, and the motion of the air have been proved, by the recent physiological experiments of Dr. Leonard Hill, to assist radiation and evaporation of the skin which has a very valuable effect on the digestion and assimilation of food, and its conversion into energy of all kinds.

In short, the climate of the Southwest has a marked stimulating effect on the human body, causing an increased appetite and activity of the metabolic processes, producing more strength

and pep, causing an increase of the bodily resistance to disease, and promoting healing.

In the treatment of any disease in which the use of fresh air is a factor it certainly is desirable to live in a climate which permits rest in the open air to be a pleasure rather than hardship. It is known that warm or hot moist climates and weather, such as the middle west suffered from last summer, depresses many of the bodily functions; the stomach and the intestines are less active, the appetite is poor ,evaporation from the lungs is slight, perspiration is profuse, the kidneys are over-excited, all of which produces a torpor of body, and mind. That such weather is harmful for patients with tuberculosis is evident.

At the same time you of Chicago were experiencing such disagreeable weather and intense heat last summer, we, in the Southwest, were enjoying comfortable days and using blankets to sleep under at night. It was hard for us to realize how uncomfortable you people were, but we feel mighty sorry for the patients who had to lie in bed under such exhausting conditions, who instead of being built up physically had to use most of their strength to combat the heat instead of fighting the disease.

Dr. Bullock made a careful analysis of statistics based on three sanatoria in the Southwest at an altitude of approximately 6,000 feet, and representing about 3,000 patients, and of four sanatoria in the East with the same number of patients. Only those patients who obtained an arrest of the disease were considered, and he found that the patients treated in the Southwest had better chances for obtaining an arrest as follows:

(A) Minimal cases—a 9% better chance.

(B) Moderately advanced cases—a 17% better chance.

(C) Far advanced cases—a 6% better chance.

In conclusion: The most bitter critics of climate grant that climate is from 5% to 15% of the factors in a cure, and while the proponents of climate claim a much higher percentage, if we agree with the 5% people, we must admit that climate is an important enough factor, often the difference between life and death, and any sensible person who can, will take advantage of it.

ORBITAL CELLULITIS AND ABSCESS SECONDARY TO SINUSITIS*

HOWARD C. BALLENGER, M. D.
CHICAGO

Orbital infections in children most frequently are due to sinusitis, particularly ethmoiditis.

The anatomical conditions in children which contribute to the formation of orbital infections are congenital dehiscences along the ethmo-maxillary suture, in the lamina papyracea, or in the orbital wall of the maxilla. An additional factor is the more profuse development of the lymphatic and vascular systems in children than in adults. Consequently the infection may be transmitted to the orbit from the sinuses by way of the blood or possibly by way of the lymph stream without any bony perforations.

Orbital abscess with exophthalmos due to sinusitis is not common and when present is almost always unilateral. The pus in some cases does perforate directly in to the orbit. It may also burrow its way anteriorly beneath the periorbita to the eyelid where it may rupture spontaneously. The case to be reported is a bilateral orbital abscess secondary to sinusitis.

REPORT OF CASE

G. L., a baby boy, 3 months of age, admitted to the Evanston Hospital on September 4, 1929, with a history of fever, red throat and head cold beginning two days before admission. The day before admission, the right eyelid became swollen with a bloody purulent nasal discharge from the right nostril. By evening the right eyeball had definite exophthalmos with marked edema of the eyelids and periorbital tissue. The cornea of the right eye was also edematous. Tenderness on pressure was present throughout the right orbital region.

The right orbit and right ethmoid were opened externally by making an incision around the upper and inner angle of the orbit. The ethmoid and right antrum were also drained intranasaly. The culture of the pus revealed streptococci predominating with some staphylococci.

Two days later (second postoperative day) the left eye lids and periorbital region became edematous, but with no nasal discharge from that side. The left eyeball was moderately proptosed. With no localized swelling over the left ethmoid region and with the left nasal cavities approximately normal and with the exophthalmos of the left eye following an exophthalmos of the right eye, it was felt that we might be dealing with a cavernous sinus thrombosis following an acute ethmoiditis and orbital abscess of the right side.

*Read before Section on Eye, Ear, Nose & Throat, Illinois State Medical Society, May 5, 1931, E. St. Louis.

RECORDS OF CHILDREN'S MEMORIAL HOSPITAL, 1923 TO 1930 (INCLUSIVE)

Patient	Age	Diagnosis	Treatment	Temp. Fahr.	W.B.C.	Days in Hosp.	Organisms	Remarks
1. H.M.	5 yrs.	Orbital cellulitis, left.	Spontaneous recovery with discharge from nose.	100 to 104	24300 to 30000	6		Periorbital swelling with marked pain. X-Ray shows cloudy left ethmoid. Eyeground negative.
2. R.C.	7 yrs.	Orbital cellulitis, right.	Anti-diphtheritic, recovery.		13000	27	Klebs-Loffler bac.	Right eye had been removed 2½ yrs. ago. Orbital tissues infected with K. L. bacillus. Culture also positive from nose and throat.
3. L.N.	4 yrs.	Orbital cellulitis, right.	Spontaneous recovery.	100.4		7		Orbital swelling beneath right eye. Cheek swollen. X-Ray shows cloudy right antrum.
4. J.G.	5 yrs.	Orbital cellulitis, left.	Spontaneous recovery.		11000	4		Periorbital swelling with closure of eye. Cheek swollen. Pus from right nostril. X-Ray shows cloudy left ethmoid and antrum.
5. I.R.	4 yrs.	Orbital cellulitis, left.	Spontaneous recovery.	100.4	21800	9	Streptococcus hemol.	Periorbital swelling with complete closure of eye. Head cold for past week.
6. T.L.	4 yrs.	Orbital cellulitis, left.	Spontaneous recovery.	102.8	12400	9	Streptococcus.	Periorbital swelling which followed a similar swelling 2 weeks before.
7. J.P.	4 mos.	Orbital abscess, left.	Spontaneous rupture in outer canthus of eye.	103	18000	18	Staph. albus.	Periorbital swelling, proptosis of left eye. X-Ray of sinuses negative. Ulcer of cornea. Paresis of left external rectus.
8. S.L.	2 yrs.	Orbital cellulitis, right. (abscess?)	Spontaneous recovery.	100.8	10400	10		Periorbital swelling. Slight proptosis. X-Ray shows cloudy left ethmoid and antrum.
9. J.L.	1 yr.	Orbital cellulitis, left.	Left ethmoid drained. Recovery.	102 to 105	14600 to 18900	30	Pneumococcus.	Periorbital swelling of left eye which healed after ethmoid drainage. Later periorbital swelling of right eye healed spontaneously. Profuse nasal discharge left eye. X-Ray of orbit negative.
10. M.F.	5 yrs.	Orbital abscess, left.	Spontaneous rupture at inner border of lower lid. Recovery.	102	18600	15		Periorbital swelling. Proptosis forward and outward. No nasal discharge. Slight movement of extra ocular muscles.
11. C.A.	9 yrs.	Orbital abscess, right.	Orbital abscess drained from behind eyeball. Recovery.	102.4	14200	36	Staph. aureus.	Periorbital swelling. Propotosis. External operation on ethmoid and window in antrum. Osteomyelitic process of roof of mouth in midline with fistula formation. Spontaneous pus discharge from right lower lid. Eyegrounds negative.
12. A.B.	8 yrs.	Orbital cellulitis.	Spontaneous recovery.	99		8		Periorbital swelling past 10 days following measles 2 weeks ago. No pain or tenderness.

The following day (third postoperative day) a fistula was found above the right upper canine tooth which apparently had its origin from the orbital cavity or possibly from the maxillary antrum.

The next day (fourth postoperative day) a fluctuating swelling was found at the inner border of the lower right eyelid. This was incised with a profuse pus discharge. Pus continued to discharge from the maxillary fistula for several days. The discharge from the right orbital incision gradually stopped. He seemed much better until metastatic pneumonia developed from which he died on the eighth postoperative day.

The autopsy showed a complete drainage of the right ethmoid and orbital cavity. The left ethmoid and orbital cavity contained thick greenish pus but with very little intranasal evidence of this contained pus. The cavernous sinus held no thrombus, but pus was found outside the cavernous sinus membrane, apparently originating by way of an osteomyelitic process of the sphenoid bone. Numerous abscesses were found in both

lungs with complete solidification of both lower lobes and solidification of the right upper lobe.

The records of all cases of orbital cellulitis and orbital abscess from sinusitis were searched at the Children's Memorial Hospital, Chicago. Only twelve cases were found on record. This is a surprisingly low number when considered in relation to the large number of children admitted per year. Of these twelve cases, eight were of orbital cellulitis only and three with orbital abscess with one case (Case 8) diagnosed as orbital cellulitis with the possibility of an orbital abscess being present inasmuch as a slight proptosis was reported as being present.

One child (Case 2) had a diphtheritic infection of the orbital tissues following a diphtheritic infection of the nose and throat. This child had had the eyeball removed 2½ years before and should not properly be classified as secondary to a sinusitis.

All of the orbital cellulitis cases recovered without operation with the exception of Case 9 which recovered after the ethmoid was drained. Case 8 in which a possible abscess in the orbit was present also made a spontaneous recovery. Of the three remaining cases of orbital abscess (Cases 7, 10 and 11) two had a spontaneous rupture. Case 7, due to a staphylococcus albus infection with periorbital swelling, proptosis and paralysis of the external rectus recovered after a spontaneous rupture in the outer canthus of the eye.

Case 10, with periorbital swelling, proptosis forward and outward and with impaired extra-ocular muscles, recovered after a spontaneous rupture through the inner border of the lower lid. This case was marked by having no nasal discharge.

Case 11, with a staphylococcus aureus infection, developed a periorbital swelling with proptosis. The child recovered after an external operation on the ethmoid and an antrum window. An interesting finding was an osteomyelitic process of the superior maxilla with a fistula opening in the midline of the roof of the mouth. Later a spontaneous pus discharge occurred from the right lower eyelid.

Summary. Of the eleven cases of orbital involvement eight made a spontaneous recovery with no drainage other than that provided by the natural orifices of the nose. Two of the cases drained by a spontaneous rupture through the orbit, one through the inner canthus and the other through the outer canthus of the eye. The two remaining cases recovered after surgical interference. In one case the ethmoid was drained and in the other patient the ethmoid and orbit were drained. All cases recovered.

The temperature varied from 99° F. to 105° F., with an average of about 101.6° F. The white blood count varied from 10,400 to 30,000 with an average of about 16,300.

The organisms were recorded in six cases. A streptococcus was found in two instances. A Klebs-Loeffler, pneumococcus, staphylococcus albus and a staphylococcus aureus were found once each.

DISCUSSION

Dr. C. F. Yerger, Chicago: The lymphatic route of infection from the sinuses to the orbit has never been proven. The orbit does not contain any lymphatic glands. When the infection is not by continuity it occurs by retrograde infective periphlebitis and thrombophlebitis. Ophthalmological examination should be made in every case. The data obtained may give valuable information. In the adult, this should include the visual acuity, perimetric and campimetric tests, and in all cases an ophthalmoscopic examination should be done at frequent intervals. I have more than once decided on an immediate and radical operative interference on account of the presence of a papilledema and have also deferred operation because of the absence of any optic nerve complication. Serious and irreparable loss of vision may occur as the result of operation being delayed too long in the presence of unrelieved pressure on the optic nerve. Many of these cases recover under the conservative or non-operative treatment. These are the cases of cellulitis which have not gone on to abscess formation. Where an abscess has formed it must be drained. If a superficial fluctuating area presents itself simple incision and drainage may suffice; or if such an area can be located by means of an aspiration syringe, the same treatment is applied. When a more radical operation is needed, I prefer the external ethmoid operation to an intra-nasal operation for the drainage of the orbital abscess.

Dr. W. V. Mullin, Cleveland, Ohio: I would like to mention the maxillary sinus as being a great possibility in these cases in children. We have had six cases this year where I am sure that orbital edema was due to the maxillary sinus. In several I found it from washing the maxillary sinus. One happened to be in the form of an exophthalmia. It started with a severe head cold, and one evening there was edema. When I got there I found them very much upset and they were going to operate. I said no, not without further evidence. X-ray showed involvement of the maxillary sinus.

I am thinking of Dr. Ballenger's case of the infant three months old: The ethmoidal sinus would be negligible as compared with the maxillary, and you had,

I believe, a fistula above the tooth, which would also point to that. I note you said the ethmoids were found perfectly clear at postmortem; on the opposite side you did not find pus. I wonder if you investigated the antrum on the opposite side on postmortem. One 14 year old boy was taken to the hospital in convulsions, with an orbital edema. There was a purulent infection of the maxillary, and on washing it out several times the edema disappeared. He had a high leucocyte count for a long time after the edema disappeared.

Dr. M. F. Arbuckle, St. Louis: It is surprising to note the infrequency of orbital complications when compared to the great frequency of sinus infections. In some of the cases at least that I have seen the matter of differential diagnosis between orbital cellulitis and cavernous sinus thrombosis was very urgent and not easy. That I think can usually be accomplished by x-ray examination of the sinus, rhinological examination of the eye grounds and consideration of the general condition of the patient.

Proptosis, with or without deviation from the normal position, i. e., straight ahead, is an important sign.

Dr. Howard C. Ballenger, Chicago (closing): Both ethmoid sinuses contained pus. The right ethmoid was found in a purulent condition at the operation. This was found in a healing condition without pus at the autopsy. Pus was found in the left ethmoid sinus at the autopsy.

The right antrum was definitely involved as shown at the operation and at the autopsy. The left antrum was not examined.

All of the infant's symptoms pointed to the ethmoids as being the primary cause of the orbital abscess in both eyes.

Many cases of orbital edema or abscess in infants may be due to an antrum infection, however I believe the ethmoids are the most frequent cause both in children and in adults.

Had we had an opportunity to drain the left ethmoid and orbit before the pneumonia developed, I believe the child could have been saved.

ELECTROSURGICAL EXTIRPATION OF THE TONSILS IN THE TUBERCULOUS*

Preliminary Report

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The favorable influence on the general health of removing infected tonsils is well recognized. In the presence of pulmonary tuberculosis, however, surgical removal is not always advisable. A tradition which has existed for years in some of the leading sanitoria forbids the surgical removal of the tonsils unless the pulmonary disease has become arrested. Whether this tradition is founded on the basis of experience, or whether it is due to our realization of the frequency of pulmonary complications following tonsillectomy is at present unsettled. The fact remains that over a four year period almost 50 per cent of 950 cases of lung abscess reported by observers[1] in this and other countries occurred subsequent to tonsil removal. According to Hedblom,[2] of 692 cases of pulmonary abscess observed at the Mayo Clinic, 21 per cent. followed operative procedures and of these postoperative abscesses 31 per cent. followed tonsillectomy.

Mode of Infection. Fetterolf,[3] contends that the mode of infection is a matter of much debate, but that the factors concerned are, among others, the condition of the patient, both local and general, the anesthetic, the details of operative technic and the postoperative treatment.

As to the pathway of infection much diversity of opinion exists. Fetterolf and Fox[4] conducted experimental studies of the operation area and found that "there are present hemorrhages, thrombi, necrosis and bacteria." These investigators state: "Hemorrhage causes rifts in the tissues, opens pathways for infection and destroys tissue. Trauma and disturbed blood-supply result in necrosis. Injured blood-vessels are closed by coagula which may become infected and loosened. Bacteria are carried into the tissues by physical force and are permitted to penetrate by the opening up of tissue clefts, especially when there has been some devitalization. These are present in an area which never can be put at rest, which constantly is open to reinfection, and which is subjected to a great deal of constrictor muscle action."

In the presence of a previously diseased area of the lung, such as a tuberculous focus, Fetterolf and Fox believe that the lesion might be activated by the dislodgement of either a sterile or a septic thrombus. Investigations thus far conducted point to the venous and tracheobronchial pathways as the prevailing ones by which the lungs may become infected.

Tonsillectomy in the Tuberculous. In spite of the apparent dangers of surgical tonsillectomy when a tuberculous focus of the lung exists, workers are still at variance in their opinions and base their contentions on personal observations

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*From the Department of Otolaryngology of the Municipal Tuberculosis Sanitarium, Chicago.

*Read before Section on Eye, Ear, Nose & Throat, Illinois State Medical Society, May 6, 1931, E. St. Louis.

and experiences. Thus Newhart,[5] in his institution, The Glenn Lake Sanitorium for Tuberculosis, established the principle that the tuberculous patient should be given the same opportunity for physical gain through the removal of pathological tonsils as is given the non-tuberculous patient. Between 1919 and 1925, Newhart and his associates performed 122 tonsillectomies on tuberculous individuals, 81 under local and 31 under general anesthesia. Of the 122 cases the ultimate outcome was unsatisfactory in only one.

Dennis,[6] in 1917, collected 34 cases in which tonsillectomy was carried out in tuberculous subjects, and he followed up 22 of these cases after operation. Of the latter the results were *distinctly* good in 17, poor in 3, and of no effect in one. Five of the patients had laryngeal tuberculosis, one tuberculosis of the pharynx, and one middle ear tuberculosis. Ether was administered in 5 cases, local anesthesia in the others. Two of the patients who had received ether anesthesia did poorly afterwards. Dennis advises choosing a time for operation when the general condition is favorable and the lungs relatively quiescent.

Ross[7] believes that active tuberculosis of the lungs is very prone to light up and spread rapidly under the depressing effect of operation and cautions that surgical treatment of all tonsils in the tuberculous should be avoided if possible.

Studies by Weller[8] led him to conclude that tonsillectomy is indicated in any suspected latent cases in which the cervical glands are enlarged, and is usually followed by reduction in the size of the glands. "Again, in early pulmonary tuberculosis, if latent disease of the tonsil is suspected, removal will cause no harm and the patient is well rid of the infectious focus. In advanced cases of ulceration, however, with lung disease, there is no advantage to be gained by tonsillectomy, and in many cases harm may be done. In these cases only local applications to relieve the symptoms are advisable." According to Weller, removal is certainly contraindicated in the presence of rales or consolidation.

Benjamin Goldberg,[9] medical director of the Chicago Municipal Tuberculosis Sanitarium, states:

"Tonsil disease is not infrequently responsible for both local and systemic manifestations which interfere with a favorable progress in pulmonary tuberculosis. The eradication of an extra-pulmonary non-tuberculous disease focus is important because such a focus hinders the natural protective mechanism of the body toward healing of the tuberculous process. I have observed the results of surgical tonsillectomy in numerous patients. New or increased pulmonary exudative involvement with activation and extension of the pulmonary tuberculosis are not uncommon. The factors responsible for them are: 1. Aspiration of blood, pus and debris from the upper respiratory tract into the fine bronchioles and alveolar structure; 2, embolic circulatory manifestations, infective or otherwise, opening the pulmonary area; 3, trauma and its effect upon the vegetative nervous system; 4, nutritional imbalance associated with painful deglutition, which, over a period of several days, may be sufficient to destroy the favorable body chemistry and aid in producing an increased permeability with new exudation. Any method of tonsillar removal or extirpation which will preclude the possible occurrence of the factors cited is an important contribution to the therapy of tuberculosis."

Electrocoagulation of the Tonsils. In an attempt to overcome the hazards of surgical tonsillectomy in the tuberculous, twenty adult patients with varying degrees of pulmonary disease were selected for electrocoagulation of their tonsils. About half of the number in the series came under the classification of "far advanced." Six of these had definite tuberculous involvement of the larynx with marked hoarseness. The remaining ones were classified under "minimal" and "moderately advanced." In every instance tonsillectomy was indicated because of repeated attacks of sore throat, local gross pathology, or some coexisting disease attributable to the tonsils as a focus of infection. The plan followed was fractional extirpation. In some only a small area was treated at a single sitting. In others larger areas were coagulated. The extent of local tissue reaction which followed varied with the size of the area treated. The amount of discomfort was likewise dependent on the size of the area included in a single coagulation puncture. No definite number of treatments was set for the completion of the work. The purpose of this experiment was to determine whether the tonsils could be extirpated, irrespective of the time or number of treatments, without deleterious effects on the progress of the pulmonary disease. The anesthesia consisted of topical applications of a ten per cent. cocaine solution, preceded in a few instances by the administration of a single ten grain dose of barbital.

At this writing, in only a few patients have the tonsils been completely extirpated. How-

ever, a sufficient number of treatments have been administered in every case over a period of from one to five months to permit the conclusion that the method produces no harmful influences on the pulmonary disease. Nor has there been observed any aggravation of the laryngeal infection. Aside from a local tissue reaction and a slight discomfort in swallowing which in no instance lasted more than twenty-four hours, there were no untoward symptoms. The patients partook of their regular meals and followed their usual sanitarium routine. After the first treatment to either tonsil there was a definite reduction in the size of the opposite one. This observation has also been noted by other workers.

Rationale of Electrosurgical Removal of Tonsils in the Tuberculous. The rationale of electrocoagulation of the tonsils in the tuberculous can be explained on the basis of several factors. If, as Fetterolf[10] believes, hemorrhage causes rifts in the tissues and opens pathways for infection, electrocoagulation overcomes these difficulties because it is nearly always a bloodless method. Secondary hemorrhage may occur, but its incidence is infrequent. There is a minimum of trauma when correct technic is employed. Each area is immediately dehydrated and sterilized by the procedure. There is no physical force to carry bacteria into the tissues, nor are tissue clefts opened up to permit their penetration. While the surface coagulum is open to reinfection, this reinfection cannot extend beneath the area coagulated because of the sealing of blood vessels and lymphatics and the production of a local active hyperemia.

These are some of the important factors which obviate the possibility of dislodgment of thrombi into the blood. When using this method the possible deleterious effects of septic mouth and tonsil contents which occasionally enter the trachea can safety be disregarded. A further desirable feature is the fact that electrosurgery of the tonsils can be performed without infiltration or general anesthesia.

Slow Convalescence and the Factor of Nutrition. Richards[11] contends that tonsillectomy in adults is always a major procedure and is often followed by great general relaxation and a slow return to normal health and strength. "This may occur in cases where the operation has presented no particular difficulty and where normal healing of the wound has followed in the usual time and without complications." Slow convalescence of surgical tonsillectomy is due chiefly to the fact that patients are unable to swallow a sufficient amount of nourishing food to adequately maintain them. Even liquids are refused because of the discomfort of deglutition. Dehydration is more than occasionally observed. The consequences of inadequate nutrition have not been sufficiently stressed. It is often a problem in the postoperative treatment of the non tuberculous patient; it is always a problem in the tuberculous. Electrosurgical extirpation of the tonsils, when correctly performed by the fractional method, obviates these difficulties. As has been pointed out, the patients partake of their regular meals and follow uninterruptedly their customary routine.

Comment and Conclusions. This preliminary study reveals the possibility of eliminating the hazards of surgical removal of the tonsils in the tuberculous by fractional extirpation with diathermy. A total of more than two hundred electrocoagulation treatments was given to twenty patients without harmful reactions and with no deleterious influence on the pulmonary disease. The chief advantages of fractional electro-surgery are: 1. The absence of primary and the infrequence of secondary hemorrhage; 2. Trauma is reduced to a minimum as compared to surgery; 3. Sterilization of the tonsils takes place after one or more treatment; 4. Slow convalescence and interference with regular nutrition are definitely avoided.

If further studies lead to results similar to those reported from this small series, diathermy should be seriously considered as the method of choice for the removal of diseased tonsils in the tuberculous.

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DISCUSSION

Dr. W. A. McNichols, Dixon: I enjoyed both the papers, and I am asking for information. One of the worst secondary hemorrhages I have ever seen occurred ten days after such an operation. I endeavored to stop it with local applications, but it persisted for about ten days. The blood was examined and there was no apparent reason for the hemorrhage. The one tonsil kept it up, and finally I infiltrated and took it out and that stopped the hemorrhage. At the University of Iowa numerous tonsillectomies are performed on tubercular patients; the cases are very carefully selected. The chief of the staff in the tuberculosis department tells me they do not find that a tonsil operation under orthodox methods on carefully selected tuberculous patients has any bad effects.

Dr. W. V. Mullin, Cleveland: I like the conservative tone Dr. Hollender put into his paper regarding caution with tuberculous patients. I happen to know rather intimately the cases Dr. Dennis selected when he wrote that paper. I know they were given careful consideration before operation. There is one very definite maxim that can be thought of in connection with these patients—they do not stand any surgical procedure. It is a matter of always starting with that idea in mind. They do not stand surgery. I can readily see that the fractional method which the doctor advises is applicable.

I cannot agree with Dr. McNichols about these tuberculous patients going through tonsil operation as well as other patients. I think that is rather the keynote of the thing. To know tuberculosis you have to live with it. In selecting these cases they must be taken up thoroughly with the director of the tuberculosis sanitarium and he must know the case and know which cases can stand it and which cannot.

Following the war we were full of sympathy for the blind, for the deafened and for the maimed. They have all been rehabilitated and are on their way, enjoying themselves through life. But the tuberculosis sanitariums are still full of patients as a result of the war. In any other type of sanitarium you can have a Christmas celebration, entertainers, visitors and friends come in, but if you do this sort of thing in the tuberculosis sanitarium all the pulses and temperatures go up. All you can do for other people that would seem to be right is bad for them. One doctor got the idea of massaging the infected tonsils and working out the infection from the crypts. He very consistently gave them all temperatures. Perhaps it may be too soon to know whether there are any untoward effects from this electrocoagulation procedure, but I believe not. Tuberculosis is so slow in everything about it, and you may pay four or five months from now for some overdoing that occurs today. These tuberculosis patients can stand manipulation and the electric cautery, and they might stand this, but surgery I am opposed to.

Dr. F. B. Balmer, Chicago (closing): I do not know why there have not been more severe complications following electrocoagulation of the tonsils, especially when one considers the sources of instruction. The complications that Dr. McNichols referred to have occurred and no doubt will continue to do so unless the same careful technique is employed as in good surgery. I am sincere in doing a good clean surgical tonsillectomy with the control of the situation at hand and no less so with electrocoagulation. The method I have presented for coagulation is essentially conservative as it should be, reducing complications to a minimum. This slow process of gradual extirpation of the tonsils is essential to safety and success. I appreciate Dr. Mullins' discussion of my paper and especially the statements concerning the tuberculous patient. I consider Dr. Hollender's paper a distinct contribution to this subject. It is very gratifying to sense the feeling of appreciation and acceptance of one's views as manifested by those here today and especially with a subject as controversial as is tonsillectomy.

*Dr. Balmer's paper was published in December, 1931.

*This discussion followed papers by Dr. Hollender and Dr. Balmer.

X-RAY THERAPY IN SKIN DISEASES*

ARTHUR W. ERSKINE, M. D.

CEDAR RAPIDS, IOWA

Although we are still unable to explain every phase of the action of radiation on the living cell the law of Arndt-Schulz that small doses of x-rays stimulate cells, medium doses inhibit the growth of cells, and large doses destroy cells, is a simple, and in many respects a very satisfactory, statement of what is known about the action of x-rays upon normal tissue.

There is no selective effect of x-rays, and the fact that certain highly differentiated cells may be destroyed, or inhibited in their growth, by doses too small to produce any visible effect on ordinary epithelial cells, is easily explained by the different susceptibility of various types of tissue. In a general way sensitivity to radiation is proportional to the degree of differentiation. The testicle, ovary, stratum germinativum of the epidermis and the cells of the sweat and sebaceous glands and their hair follicles are all easily affected by radiation.

*Read before Section on Radiology of Illinois State Medical Society, May 7, 1931, East St. Louis.

Among diseased cells which show a pronounced sensitivity to the action of x-rays are those of hyperplastic connective tissue, and young rapidly growing cells of the embryonal type. Excessive growth of the cells of the horny layer of the skin is checked by the action of x-rays. The analgesic effect of x-rays is also well known although we do not exactly understand how it is produced. It is used mostly for the relief of itching and neuralgic pain. Contrary to what was once a common belief, x-rays do not kill bacteria. They are, however, used with good result in several inflammatory conditions.

In a general way, therefore, x-ray therapy is indicated when it is desirable to produce the following effects:

1. Stimulation.
2. Inhibition of the growth or function of glands.
3. Solution of hyperplastic connective tissue.
4. Reduction of lichenification.
5. Relief of pain or itching.
6. Reduction of inflammation.
7. Destruction of malignant growths.

Stimulation.—It is probable that there is no true stimulative effect of x-rays, and that the changes which we speak of as due to a stimulating dose are really processes of repair following an injury caused by irradiation. This conception of stimulation is not so paradoxical as, at first thought, it may appear. Sunlight, for instance, is undoubtedly stimulating, and yet the initial effect of sunlight in an amount large enough to produce evidence of simple inflammation can hardly be anything but injurious to the cells of the skin. Perhaps, in spite of all our theories, we might be nearer the truth if we held the simple belief that the individual cell is always injured by the action of x-rays, and that the degree of such injury depends upon, first, the size of the dose received, and, second, the sensitivity of the cell to radiation. The so-called stimulative effect of x-rays is used in many skin diseases, especially those characterized by sluggishness and dryness.

The occasional rapid growth of a malignant tumor during or following x-ray treatment is sometimes accounted for by the theory that a stimulating dose of x-rays has increased cell proliferation. In almost every case of a large tumor with metastases, the dose to individual cells throughout the part irradiated must vary from zero in the most remote part up to the maximum dose delivered to the nearest cells. Some cells, therefore, must always receive a stimulating dose, if such a thing exists. Because of their rarity we can probably correctly ascribe the instances of rapid tumor growth following irradiation to pure coincidence, and conclude that true stimulation of malignant cell growth is *not* produced by x-rays.

Inhibition. X-rays inhibit the function and growth of cells. Differentiated cells, such as those composing glands and hair follicles, physiologically active cells, young cells, cells about to divide, lymphoid tissue and tissue of the embryonic type are all markedly radio-sensitive. It is upon these two facts that a large part of the indications for x-ray therapy depends. It is by them that we are able to explain the results obtained and conversely, they show why x-ray treatment of many conditions is futile.

The list of diseases in which the inhibitory action of x-rays is used is long. It includes, for example, many skin diseases characterized by hyperactivity of the glands, such as acne, seborrhea or hyperidrosis and diseases in which epilation is desirable, such as tinea or favus.

Hyperplastic Connective Tissue. X-rays act as a direct solvent of excessive connective tissue such as that in keloids and dermatitis papillaris capillitii. They seem, however, to have little or no destructive effect on normal connective tissue.

Lichenification. The well known effect of x-rays on overgrowth of the cells of the epidermis, as, for example, in psoriasis, lichen simplex, eczema with thickening, and keratoses, is probably produced by inhibition of cell division and activity.

Anodyne Effect. There is no doubt that x-rays will often temporarily, and sometimes permanently, relieve itching. When the itching is due to an eruption such as eczema it usually disappears when the eruption heals. It is not so easy to explain the relief of pruritus ani by radiation. "If it can be assumed that the itching, in cases of pruritus without visible cutaneous changes and which is amenable to roentgenization, is due to alteration in the collagen or in the sensory terminals or fibrils (inflammation) it is conceivable that radiation acts by inhibiting chemical action and cell proliferation." (X-rays and Radium in the Treatment of Diseases of the Skin. G. M. MacKee, M. D., Page 395.)

It is not so certain that x-rays will relieve pain

except when the pain is due to a lesion that can be cured by irradiation, although many writers have reported what seems to be an analgesic effect upon neuralgic pain.

Inflammation. While x-rays are not germicidal they do exert a beneficial effect upon some inflammatory processes such as carbuncles. (Radiotherapy for Inflammatory Conditions, A. U. Desjardins, M. D., Journal A. M. A., Feb. 7, 1931.) No entirely satisfactory explanation of this effect has been made. X-rays are directly destructive to some fungi such as those causing actinomycosis and blastomycosis. They may have some destructive effect upon tinea epidermophyton, but in tinea tonsurans, tinea favosa and tinea barbae, the effect is mechanical. The hairs fall out and carry the organisms with them.

Destruction. All that has been said about the inhibitory effect of x-rays applies with equal force to their destructive effect. As a rule, it is only upon malignant or potentially malignant growths that the full destructive powers of x-rays are loosed. Because they are composed of young cells and cells about to divide, they are often so sensitive to radiation that they may be destroyed by a dose only mildly injurious to the surrounding structures.

Precautions. While only a relatively small number of skin diseases can be completely and permanently cured by x-rays, they are certainly the most effective agent that we have for the relief of many distressing symptoms. Their effect in healing unsightly eruptions is sometimes so nearly magical that the roentgenologist must resist the importunities of his patients, and his colleagues, to "try" x-rays on many skin diseases for which they are not indicated. If one is treating skin diseases it is only reasonable that he should know something about dermatology, and the conscientious roentgenologist must equip himself with at least a working knowledge of the diagnosis and medical treatment of the common skin affections in addition to perfecting himself in the technical details of his own art.

The first precaution to be observed in the dermatological application of x-rays, is not to be too persistent. Even small exposures repeated over a long period may produce telangiectases and atrophy of the skin. If a disease fails to respond to an ordinarily effective amount of treatment it is usually best to change to something else. In the treatment of psoriasis, for example, it must be remembered that the disease will probably persist throughout the patient's life, that the psoriatic lesions are radiosensitive and react to smaller doses of x-rays than does normal skin, and that even small doses of x-rays cannot be continued indefinitely without some danger of producing atrophy and telangiectases. It is wise, therefore, for both the patient and the physician to be content with results considerably short of perfection.

The second precaution is to avoid over-exposure. With the exception of sarcoma and carcinoma, not many diseases of the skin are dangerous to life, and the disregard for cosmetic results which the roentgenologist properly acquires in treating malignant conditions is not an asset to him in the treatment of minor lesions.

The third precaution is to avoid under exposure. It is not enough "never to do any harm —always to stay on the safe side." Especially in the treatment of skin malignancies the danger to the patient from under-dosage due to timidity is a real one.

In order to increase accuracy and to avoid the dangers of over-dosage and under-dosage there are three practical procedures which may be and should be employed. The first of these is the use of a simplified technic. I am convinced that it is entirely feasible to treat all non-malignant dermatological conditions for which x-rays are indicated with a single combination of technical factors. There can be no argument against always using the same anode-skin-distance and milliamperage, and there seems to be no good reason why a voltage as high as the capacity of the tube or apparatus will permit should not also be a fixed factor. High voltage shortens the time required for treatment, which is a distinct advantage. Variations in voltage and filter thickness affect hardness. Since there is considerable doubt that *great* variations in hardness produce different biological effects, it seems reasonable to assume that many *small* variations are unnecessary. The same argument applies with equal force to the use of many thicknesses of filter. I believe that the routine use of a filter of 1 mm. aluminum will serve every purpose. The use of unfiltered x-rays, except when controlled by exact measurements, can well be abandoned. It is well known that the output from

a new thin-walled tube may exceed by as much as 100% that from an old tube with a thick wall and a pitted target, while if a 1 mm. aluminum filter is used the difference is not more than 30%. The good results obtained by dermatologists from the empirical use of unfiltered x-rays can probably be explained by the larger doses given.

A second practical method of increasing accuracy is for the roentgenologist to have the intensity and quality of the x-rays produced by his standard technics checked at regular intervals by a physicist equipped with an accurate measuring instrument calibrated in absolute units. Such service is now available in many communities and it is hoped that within the next year enough universities and other institutions will be working in cooperation with the United States Bureau of Standards that it can be rendered throughout the country at a reasonable cost.

The most effective method of assuring accuracy and the one which no doubt will be almost universally practiced within the next few years, is the measurement of each dose of x-rays when given by an instrument calibrated in international units. There are at least two American made instruments of proven accuracy and reliability. One is equipped with a large ionization chamber permanently mounted in the path of the rays. The current passing across it is read directly from a microammeter. This instrument can be used as a constant check on intensity with no greater effort or loss of time than is required to observe a milliammeter. It measures x-rays as they are produced, instead of as they are received by the patient and does not register the effect of back scattering. The other instrument is equipped with a small chamber connected to a string electrometer. The ionization chamber is exposed for a definite time, usually one minute, and the number of r per minute is read from a scale. This instrument has the great advantage of being easily used for measurements directly on the skin of the patient. While it is not expected that all, or even many, roentgenologists will measure dosage in absolute units for several years, the cost is not prohibitive, and the roentgenologist who will add a reliable instrument to his armamentarium and use it routinely will be well repaid.

For practical purposes one may assume that, including backscatter, the minimum erythema dose on untanned skin is approximately 250 r; that the epilation dose is 450 r for soft rays; that the skin unit dose as generally used by dermatologists is about 600 r; and that the effective, toleration, or 100 per cent. dose corresponds fairly closely to the maximum safe dose, for various sizes of fields in the following table:

Size of Field in Cm.	Maximum Safe Dose in r.
1 x 1	2500
5 x 5	1500
10 x 10	1200
15 x 15	1000
20 x 20	900

Valid exception might be taken to the accuracy of these definitions, but they lay the foundation for a fairly clear conception of the meaning of dosage in absolute units.

Many of the precautions enumerated in the foregoing paragraphs can be ignored in the treatment of epithelioma. Occasionally we see an epithelioma so resistant to the action of x-rays, or of so high a degree of malignancy, that a cure is impossible no matter how vigorously it is treated. In the great majority of cases, however, I am convinced that failure to cure is due to insufficient treatment. Treatment may be discontinued too soon because the physician or the patient, or both, decides that the healing of the lesion indicates that a cure is complete. More often the patient abandons the treatment because he is frightened by the appearance of a reaction or is discouraged by his friends. For practical reasons, therefore, it is advisable to attempt complete destruction of the epithelioma at once. This can be done by giving the total amount of x-rays required for a cure so rapidly that the series is completed before a reaction appears. Destruction of the lesion by electro-coagulation at the first visit of the patient serves the same purpose, and is entirely proper. Many indurated epitheliomata, especially on the lip, should be excised, but elderly patients often have an exaggerated fear of "the knife" and flatly refuse operation. A dogmatic attitude with these patients merely drives them to a quack, and it is often wise to compromise with them and destroy their lesions by electro-coagulation without much regard for the size and appearance of the resulting scar. Although the cosmetic result of the treatment of epithelioma with x-rays is often surprisingly good, one should not be deterred from using adequate dosage by the fear of sequelae such as

atrophy and telangiectases. Permanent damage to the skin in many cases is to be expected, and should have the same significance as the scar produced by a surgical operation.

X-rays filtered through 3 mm. aluminum or .25 mm. copper are used in all cases. The dose is the maximum that can be safely given, 2,000 to 2,500 r for small areas, and smaller doses for larger areas as shown in the table. The dose can be divided for convenience into several treatments, but the total amount should be given within two weeks. Adjacent glands may be given 1,000 r which can also be divided into two or three treatments. The patients should be kept under observation for at least a year after the epithelioma has healed.

Higley Building.

DISCUSSION

Dr. Edwin C. Ernst, St. Louis: The presentation by Dr. Erskine relative to the many interesting skin therapy problems, with special reference to the practical use of x-ray, is indeed timely. His review of the many methods of treatment, by comparison with the more modern techniques requiring added precision in the application of these accurate dosages, should be given serious consideration by everyone interested in the treatment of skin lesions.

The time is not ripe for us to rely entirely upon output measuring instruments, and we should continue to consider all of the physical input factors, such as voltage, milliamperage, filter, distance, etc. However, it is essential that we should make every effort towards accurately measuring the output of the radiations we employ so as to be in the position of speaking the same dosage language.

We all realize that today we are giving much larger dosages in certain malignant lesions. Frequently one radiologist is able to note a cure, while others find the radiation to have been ineffective, but in the final analysis it was merely a matter of insufficient or inaccurate dosage. This also applies to the question of comparing the individual effects of radium and x-ray in the treatment of skin malignancies. Many radiologists prefer radium. Without discussing the problem further, I merely wish to present my views relative to this matter by stating that in our hands we can almost duplicate the average radium results with x-ray therapy and in many instances with less scarring. There are cases, of course, in which radium is distinctly indicated. Whenever treatment is administered near the eyelids, I prefer the use of x-ray since we observed improved cosmetic results. It is possible that these variations may be simply a matter of dosage, irrespective of the agent employed.

Being a radiologist and not a dermatologist, I am most reluctant to primarily treat skin infections or lesions by radiation. I usually refer them to a dermatologist, and if his treatment dose not produce satisfactory results, will attempt x-ray therapy. There is no question but that a large number of these cases eventually require x-ray treatment.

Relative to the question emphasized by Dr. Erskine of radiation technique simplification, I believe as he does that there is little need for the present multiplicity of techniques, variable voltages, and numerous filters. At the Barnard Free Skin and Cancer Hospital we employ a constant voltage at a fixed distance and routinely only vary the time factor. Occasionally we do not employ filters, but in the average case one millimeter, rarely three millimeters of aluminum is the method of choice, and for the average case is sufficiently flexible and effective.

Many different physicians and technicians are taught to administer these treatments at the hospital clinic from time to time, and since our results have been satisfactory, rarely producing any unfavorable skin injury in the treatment of such a large variable group of cases, such favorable end-results could only be due to the simplification of the method or technique, as well as to the accurate dosage meters routinely employed for this important work.

EMBRYOLOGY OF THE LARYNX*

OLAF M. STEFFENSON, M. D.
CHICAGO

Organisms and organs develop pretty much in the same manner. Tissue infoldings and tissue projections combined with cell accumulations are the continuous and recurring steps.

The human fetus in its early stage consists of three closed tubes arranged in concentric arcs. The outside tube, curved and folded upon itself cephalad to form the brain, is the largest. The inner tube develops into the heart and blood vessels—the early heart may be seen situated in the neck. The middle tube extends from the cephalic fold of the neural tube above to the caudal extremity of the fetus. It is of special

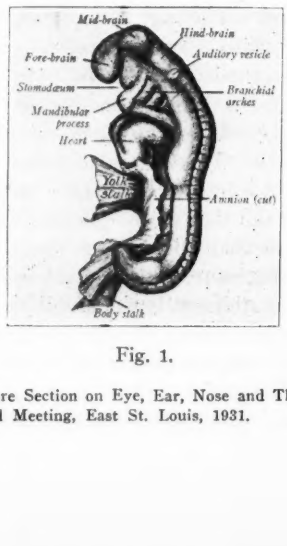

Fig. 1.

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Meeting, East St. Louis, 1931.

interest to laryngology because the respiratory apparatus develops from its upper portion.

The resorption of the pharyngeal membrane opens the middle tube cephalad between the two branches of the first branchial arch. Communication is thus established between the pharynx

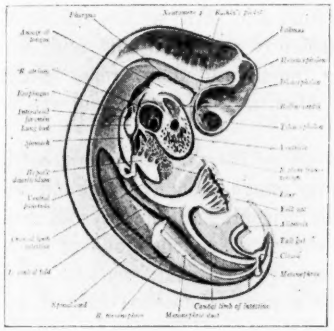

Fig. 4.

and the oral cavity and later with the developing respiratory tract.

The sides of the middle tube are in contact with the remaining branchial arches and in fact sends out projections between them. The dorsal wall of the tube is smooth and continues caudad as the posterior wall of the esophagus.

The sides of the pharynx show four pouches, extending outward and forward between the branchial arches; and from these pouches many important structures are formed.

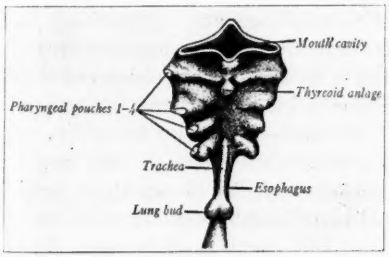

Fig. 2.

The arches diminish in size from above downward and so create a funnel shaped pharynx.

In the second week a longitudinal groove appears on the ventral surface of the esophageal tube at a level with the fourth pouch and this groove extends caudad for a variable distance.

The respiratory groove on the esophageal wall evaginates anteriorly and continues caudad as a budding tube on the front of the esophagus. The posterior borders of the groove constrict, approximate each other, coalesce and form the party wall between the gullet and the air-way.

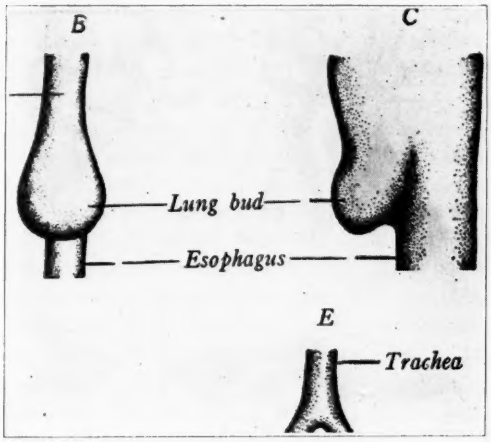

Fig. 3.

This groove and bud in the front wall of the pharynx is the humble beginning of the respiratory system in man.

The upper limit of the respiratory groove develops a raised transverse border—the furcula of His. This prominence is the beginning of the epiglottis and becomes later invaded by mesenchymal tissue from the third branchial arches.

Fig. 5.

At the upper border of the closing edges of the respiratory groove, at a level with the furcula and posterior to this structure, two oval mesenchymal condensations appear and these are the arytenoid eminences—the levers that move the vocal cords—the structures that are so vital to voice production and respiration.

At first their caudal parts are parallel and both arytenoids lie close to the epiglottis. Later they are withdrawn and slide away in a posterior direction from the epiglottis. As a result of this maneuver the ary-epiglottic structures appear

laterally and maginal. The laryngeal orifice is established.

At this stage the hyoid condensation is on the same level as that of the thyroid condensation. The two condensations are bound together with mesenchymal tissue.

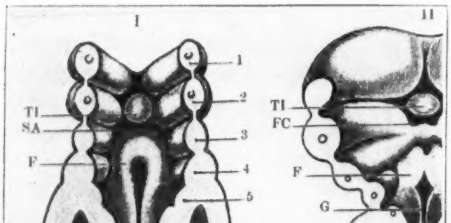

Fig. 6.

Fig. 7.

Fig. 8.

As the thyroid structure descends in the neck and elongates to assume the adult shape the original mesenchymal connection pulls up the entoderm lining of the larynx and produces the ventricles of Morgagni, the saculus laryngis and the ventricular bands or as they are commonly known, the false vocal cords.

The branchial arches occupy the sides of the neck. They are bar-like condensations of mesenchyme and fill the areas between the clefts. The arches are incomplete in front but continue to develop and form the supporting substance of the different orocervical structures.

The first arch divides into two branches, one of which forms the upper maxilla and the other develops into the lower mandible.

The second and third arches are concerned in the formation of the hyoid bone and the epiglottis. The fourth and fifth arches contribute to the formation of the thyroid and cricoid structures.

Formation of the cartilaginous structures. At the 10 mm. stage—the five-week-old fetus—the hyoid, the cricoid, and the thyroid regions appear as shadowy condensations of mesenchyme without any trace of condrification. The thyroid looks like a mass, horseshoe shaped, of mesenchyme and the cricoid and arytenoids are just faint indefinite masses of the same material. The epiglottis is only a flattened condensation. There is no sign of an inferior or a superior thyroid horn until the 12½ mm. stage. The thyroid then begins to elongate and spread out its lateral wings away from the cricoid structure.

The cricoid at this stage is mesenchyme and somewhat compressed laterally. The arytenoids may be recognized as oval shaped masses of mesenchymal structure. The epiglottis is wider and the greater cornua of the hyoid bone have developed.

At 16 mm.—the six weeks' fetus—the thyroid is much larger and the posterior portion of the cricoid is enlarging and approaching its adult shape. The hyoid is undergoing chrondrification and is showing the attachment of the middle constrictor to its greater horns.

At 20 mm.—7½-week fetus—the thyroid shows considerable cartilege. Its upper horns are attached to the hyoid and the inferior horns are distinctly in evidence. The cricoid is well developed and partly cartilaginous. The arytenoids are shaped up and are showing islands of cartilage. The cartilages of Wrisberg and those of Santorini are visible and are in their proper position.

Musculature of the Larynx. The laryngeal muscles at five weeks show their position as streaky vague structures in the definite places where they belong. The crico-arytenoideus posticus, the crico-arytenoideus lateralis, and the thyro-arytenoideus are faintly fibrillar. At

12½ mm. the fibrillation in the muscles show well, especially in the postici which are best developed at this time. At 7½ weeks the pharyngeal constrictors are all well developed.

Nerves of the Larynx. The superior laryngeal nerve may be traced as far as the greater horn of the thyroid structure at the end of the fifth week. The recurrent nerve is much better developed and may be followed as far as the regions of the posticus muscle. At 12½ mm. both superior and recurrent nerves may be followed as mixed nerves and at 20 mm.—7½ weeks—the superior laryngeal nerve divides into an internal and external branch at the level of the hyoid horn. The external ramus descends vertically to the crico-thyroid muscle and the internal ramus is distributed to the lining of the larynx as far as the border of the true cords. The recurrent nerve ascending enters laterally at the cricothyroid articulation and supplies all the intrinsic muscles of the larynx. It also sends sensory fibres to the subglottic area.

Both nerves anastomose freely with each other and with the cardiac branches of the pneumograstric.

CONCLUSIONS

The party wall between the respiratory and the esophageal tract is the result of the peculiarity of the embryonic development and the extent of this wall depends upon the length of the cephalad closure of the posterior border of the respiratory groove.

Malformations are rare in the anterior portion of the larynx. Inequalities, differences in size of component parts, and deformities are generally found only in the posterior part of the larynx—in the areas developing from the groove-borders. The location of eye ball defects is in the inferior part of the globe of the eye and correspond to the plane of ectoderm infolding.

The early epiglottis is omega-shaped and overhangs the inlet of the larynx. The failure of this structure to flatten out and to anteflex results from the lack of development and shows the persistence of the embryonic type.

Absence of the trachea results from the failure of the infra-cricoid tube to elongate; the two bronchi then spring directly from the bottom of the cricoid.

The ventricular bands or false vocal cords are accidental results of the changing position of the parallel hyoid and thyroid condensation masses. The descending thyroid structure permits the original mesenchymal connection with the hyoid to pull up the entodermal lining and so causes the appearance of the upper shelf or band.

The ventricle of Morgagni and the saculus laryngis are the pulled up cul-de-sac of entoderm external to and above the false cord, structures very similar in origin to the bursa pharyngis, another accidental formation.

The true vocal cords are the tendons of the thyro-arytenoid muscles; they vary much in size and texture.

The false cords have no definite fibrous structure in their proper substance. Unlike the true cords the false cords have mucous glands beneath their epithelial cover and are simply accidental results of the ventricle of Morgagni formation.

The coughing induced by irritating the external ear canal and the referred ear pain in connection with malignant invasion of the larynx is readily explained by the inter-communication of the auricular and the laryngeal branches of the tenth nerve and with Jacobson's nerve.

Some of the severe cardiac disturbances incident to coughing spells are explained through the connection of the laryngeal and the cardiac branches of the tenth nerve.

The inferior laryngeal nerve passes directly forward to reach the larynx at the period of development when the fourth aortic arch is situated in the neck above the entrance of the nerve. The descent of the aorta into the chest on the left side and that of the subclavian on the right side carries the respective inferior laryngeal nerve down into the chest cavity and in this manner causes the recurrent course of the nerve trunks.

The ventral portion of the second and third branchial arches converge and insinuate themselves between the furcula and the tuberculum impar. The space posterior to the union of the arches is the sinus arcuatus which divided by the glosso-epiglottic ligament becomes the right and left valleculae.

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DISCUSSION

Dr. Wm. L. Hanson, East St. Louis: I was particularly interested in the paper of Dr. Steffenson's because

of its similarity and relationship to my paper which is to follow.

In review I might state that the first branchial arch forms into two portions, the maxillary process and the mandibular process. The second forms the styloid process and the lesser cornu of the hyoid bone. The third arch forms the greater cornu of the hyoid bone. The fourth and fifth arch forms the thyroid cartilage. During the first month of embryonic life an elevation becomes prominent where the gut opens into the respiratory tube; this is known as the furcula. At the end of the first month an elevation takes place lateral to the furcula known as the arytenoid ridge and a short time later another fold becomes prominent on the medial side of the arytenoid ridge and this is known as the cuneiform ridge.

ACUTE POLIOMYELITIS*

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Ten years ago this fall my father and I read papers before this Society and others on acute poliomyelitis.[1] Clinical features of the preparalytic phase were discussed by him while I spoke on an outline of the pathology and treatment. It was of interest in preparing this paper to go over those two manuscripts and compare some of the statements made therein with those now made, ten years later. The importance of prompt recognition of the acute general preparalytic phase as the disease was emphasized then. It has been stressed through the decade and is still considered the vital factor in instituting treatment. I trust you will pardon some quotations from that discussion as they seem to me to convey their message even more clearly now than heretofore.

"The general systemic phase is the disease as it also is the preparalytic phase or stage of the disease. Paralysis is the accident or result of the disease just as perforation of the intestine is an accident of the disease, typhoid fever, or paralysis following diphtheria is the result or accident of the disease diphtheria. As in typhoid fever, diphtheria or other infections with an aftermath the question of relationship between the general systemic phase and the localized accidents is one of the pathology. In other words, we err in diagnosis when we wait for the paralysis to enable us to recognize the presence of the disease."[1]

General medical literature has stressed during the past decade the features brought out by Peabody, Dochez and Draper in 1912,[2] Wickman in 1913,[3] and Draper in 1917.[4] Clinical studies have emphasized the general infection as being the part of the illness deserving primary consideration. The work of Aycock and Luther[5] and many others has brought to the attention of the physician in general and the physician in public health the characteristics of the illness which had previously been chiefly observed by those having a special interest in it. Experimental poliomyelitis has taught us a great deal about the course, the pathology and more important still the efficacy of immune serum as an agent to neutralize the virus. We here in Illinois are extremely fortunate to have as Chief of the Division of Laboratories of our State Department of Public Health, Dr. H. J. Shaughnessy, who has done a great deal of important research work on the experimental disease. Technical papers by him and his associates are quoted regularly in the literature. His article in the recent number of the *Illinois Health Quarterly* summarizes in excellent fashion present conceptions of the disease.[6] I think that all physicians in Illinois are grateful for this special interest in poliomyelitis as it has enabled the Department of Public Health to make convalescent immune serum available. I am personally indebted to him for consenting to come here today to discuss this paper.

The clinical features of the early part of poliomyelitis were summarized before this Society in 1921 as follows: "The first group of symptoms are headache, malaise, nausea, vomiting, constipation or diarrhea, fever, pain, spine sign, hyperesthesia, muscle weakness." Draper this year makes a division of these symptoms and signs in a recent article.[7] Some of these symptoms and signs appear in many acute infections in children and young people. How then are we to analyze the case and say which is early poliomyelitis and which is not?

The answer to such a question is difficult to give. One reason is that there are many cases that are of a mild type, which do not show all the signs of the acute disease, may not show weakness and escape the complication of paralysis. As I look back over records and recall cases I realize that I have called such conditions acute gastro-enteritis or food poisoning, perhaps some "summer flu" though I must state that I have never been satisfied with this latter term as a diagnosis. The patient or the family is more apt to employ this phraseology and for want of

*Paper read before the Central District Medical Society, Pana, Ill., Oct. 27, 1931.

recognizing what may have been a mild poliomyelitis I have let it go.

There are, however, some leads that are important in the differential diagnosis and that have proved helpful. First and foremost is the impression that we see of an individual who is sick, sick out of proportion to what one would anticipate from the history. The prostration seems more than one would have reason to expect. Second the general physical examination of the parts where one usually notes findings is essentially negative. There is not enough in the throat to account for the malaise, the headache, the gastro-intestinal disturbance. Nor are the findings in the chest and abdomen sufficient. The general lymph node enlargement which Burrows has recently stressed[8] has been found though not constantly in cases running back to 1916 when I first became interested in this disease. Third the examination of the nervous system does show evidences of irritability.

One does not have to be a neurologist to make the type of examination that leads to a diagnosis of early poliomyelitis. The presence of a coarse tremor when the patient moves or is moved has frequently been mentioned by the individual or by member of the family. Draper and Aycock have called this the "ataxic tremor." Draper puts it in the stage of the disease where the virus is passing from the general systemic infection period to the central nervous system period. Soreness or distress in the back on anterior bending of the body is usually characteristically present. Draper has called this the "spine sign" and considers it due to irritation particularly around the ganglia. Information about the pain in the back has been volunteered by patients usually in describing sensations when they try to sit up in bed. Three cases are recalled where the discomfort noticed when the patient sat up in bed for lung examination led, in connection with other findings, to the diagnosis of poliomyelitis. Resistance to movement is rather more than the usual withdrawal that many sick children show. Kernig's sign may or may not be present at this time. One is conscious more of moderate rigidity than a true Kernig if such a distinction can be made. We usually think of absent deep reflexes when we think of this disease. That is correct when the complication of paralysis has occurred. However, in the stage under discussion here the complication has not occurred. Irritation rather than loss of function is in force. The deep reflexes are therefore often overactive. The superficial reflexes observed on stroking the abdomen are, on the other hand, usually gone.

The presence or absence of further signs of central nervous system irritation or invasion depends largely upon the time elapsed between the onset of illness and the examination. When an epidemic is on people generally are more conscious of the dangers. Illness in the family is more likely to be considered as potentially serious. The physician sees the case earlier. Sporadic cases are more apt to be seen in later stages with weakness or paralysis already developed. A few hours may make quite a change in the picture. Consequently if poliomyelitis is considered (and it should be considered more often than not) in the differential diagnosis and if a definite suspicion or diagnosis cannot be established the patient should be seen again promptly; to wait until the next day may be too late.

Spinal puncture with examination of the fluid is a needful diagnostic procedure in the early course of the disease. There is a phase very early, probably earlier than most cases are seen, when the fluid is negative. When signs of irritation of the central nervous system are present the fluid has become positive. Pressure is increased. Cell count is up. Globulin may or may not be present early. Generally the cell count is up then gradually decreases while the amount of globulin is at first low, if any, then gradually increases.

Spinal puncture is also a therapeutic aid. When the outline of pathology and treatment was presented here ten years ago puncture with spinal drainage was the method of treatment discussed. During the past eight years it has been subordinated to the use of convalescent serum intraspinously as well as by other routes.

The course of illness depends essentially upon the resistance of the individual and the amount and virulence of the virus received. A summary of the outline of the pathology previously referred to still holds good in the statement that perivascular infiltration is the important change whether it be in lymphoid tissue or in central nervous system. Because of the striking effects of the disease on the central nervous system and the fact that death is due to respiratory paraly-

sis attention has in the main been focussed on the lesions there.

The infiltration is considered to be the reaction of the body to the presence of virus in the perivascular lymph spaces. A prominent feature in the central nervous system is that this reaction of edema and infiltration interferes with the normal nutrition of the nerve cells. A direct toxic effect of the virus on nerve cells is likewise important. The anatomical arrangement of the vessels in the spinal cord throws the major part of the accumulation in the neighborhood of the anterior horn cells. Consequently if some change does not occur to lessen this accumulation these cells, being deprived of their nutrition, begin to fail in their functions. The result of this is first irritation, then weakness, then paralysis. The end result depends upon the degree of damage done to the groups in the anterior horns. If slight, full function may be restored; if total, paralysis is permanent, for the nerve cells of the central nervous system do not regenerate.

Burrows[8] has recently stressed the changes in the lymphatic system. He contends that the portal of entry is in the gastro-intestinal tract and spreads to the lymphatics in other parts, especially the lymphatics of the central nervous system. He proposes the term acute lymphatic hyperplasia on the basis of the primary lymphoid tissue and space involvement.

The effort in treatment is of course to prevent this extension of the infection through the body. Particularly is this important to prevent extension to the nervous system or within the nervous system.

Studies in experimental poliomyelitis showed that the serum of monkeys recovered from the disease had the power to neutralize the virus. Thus monkeys inoculated with active virus could be prevented from developing the illness or could be treated with good expectations if serum were given sufficiently early. Serum from humans recovered from the disease was found to have similar powers. Convalescent serum has been used for twenty years and is now generally considered the most valuable agency in treatment. Normal adult serum and whole blood have also been used.

Too much, however, must not be expected of convalescent serum. If the disease has gone so far that the complication of paralysis is well developed it is useless to expect that serum will cure an already existing condition of this type. It may arrest the spread of the infection when used in this manner. All writers have emphasized, however, that the time to give serum is in the early stage, the preparalytic phase. Draper advises it being used in what he calls the preataxic tremor phase though he does not advise the intraspinous use then. Serum may be given intramuscularly, intravenously and intraspinously. We prefer intraspinous administration in the belief that it is advisable to put the highest concentration of immune substance where it is most needed and where the effect will be most promptly secured. It would be better to give serum intramuscularly as soon as available than to wait until facilities and equipment for more technical procedures are at hand.

The State Department of Public Health has this year prepared serum for distribution. Springfield is the main depot though there are centers of supply in various cities over the State. Rapid automobile transportation makes these centers accessible to all downstate within a few hours while the Chicago territory is cared for by the Serum Institute at the Michael Reese Hospital as well as other sources. Serum is prepared by taking blood from a recovered case, separating the serum, testing it for sterility and in public health work by Kahn tests, then storage. Before it was available from the State Department of Public Health we prepared it as needed using individual donors from time to time.

Three cases which show the results of the use of convalescent serum at different stages may be of interest:

A girl, aged seventeen years, had had a digestive upset with onset of nausea and vomiting. Abdominal pain, pain in the right arm and shoulder, headache, temperature of one hundred and one were the symptoms related to me one evening. When seen about nine-thirty accelerated respiration, slight stiffness in the neck, slight resistance on the Kernig test on the right, absent abdominal reflexes, tremor of the right arm on movement were found in addition to the subjective symptoms mentioned in the history. There were no other physical or neurological findings. The patient stated that the right arm felt cooler to her than the left though no palpable temperature difference could be elicited. Telephone communication with Dr. Shaughnessy gave the information how serum could be secured at night. This word was passed on to a relative of the family in Springfield. Shortly before midnight the serum was administered, eighteen c.c. being given intraspinously.

The fluid was under increased pressure, cell count twenty-seven, no globulin. Temperature remained elevated for twenty-four hours, has been normal since then and further progress uneventful. It might be argued that this case might never have gone on to paralysis. Granting this, there remain these features of the case that made me feel that prompt intraspinous serum therapy was indicated; respiration was accelerated and the arm area was involved. My father has pointed out to me often the seriousness of deltoid involvement. The portion of the cord supplying the deltoid is the same that supplies the diaphragm. Hence the unfavorable prognosis if deltoid paralysis sets in, even if unilateral.

The second case exemplifies this: A boy, aged seven years, developed gastro-intestinal disturbance five days before his doctor was called. A return of fever and development of weakness in the right arm and shoulder alarmed the parents. Eight c.c. of serum were left from a case his doctor and I had seen together the week before. This was given intramuscularly by him as well as forty c.c. additional as soon as it could be secured from Springfield. It was hoped this would take care of the situation. When I saw the patient two days after the development of neurological signs he had complete deltoid paralysis, Biot breathing and was cyanotic. Introspinous serum was not given as the outcome was considered inevitable. Death occurred eight hours later.

A third case shows the ability of serum to check the extent of the disease though also shows it to be of no avail in clearing up damage already done. A college girl, aged twenty years, had some digestive disturbance over the week-end, but went to a dance that Saturday night and for a long walk in the woods on Sunday. Monday she complained of her legs aching and had some fever—these were considered the result of the digestive upset and the additional exercise in the previous two days. When seen a temperature of one hundred and one, weakness in both lower legs, moderate resistance of the neck, a slight Kernig and difficulty in voiding urine were the positive findings. These signs, together with the fact that I had called an illness that her brother had recently had in the West an attack of the cerebral type of poliomyelitis, led to the diagnosis of her case. This was eight years ago. Convalescent serum, using the brother as donor, was prepared and administered intraspinously and intramuscularly. By the time the serum was ready paralysis of the lower extremities was complete and the extension up the trunk could be watched almost from hour to hour. I speak of this because of a statement made by the patient, a very stable intelligent girl, that within an hour and a half of the intraspinous therapy she felt a change. She did not notice the ascending weakness that she had previously been able to delineate for physician, relatives and for the staff of the sanatorium as we saw things progress. This was one of my early personal experiences with the use of convalescent serum. I have watched that girl resume after a year and a half her college work, carried to classes by her brothers and friends, secure her A. B., go on to take an A. M. She is now on the staff at Warm Springs and is an example of what character, courage and determination will accomplish in overcoming a handicap.

Injections into the subarachnoid space are not as formidable as they appear. Sharp needles and proper holding of the patient are the important elements. We now keep at the Sanatorium a bag containing needles, gravity intraspinous outfit, syringes, manometer and all necessary accessories, sterile and ready solely for serum therapy. Simplified technique makes the procedure relatively easy of accomplishment. The equipment is, of course, the same for treatment of meningitis or tetanus or any other condition where intraspinous injections are desired; only the necessary sera need to be added.

When cases appear in a community the alarm is immediate. The mild cases that I have spoken of previously are undoubtedly the means of the spread of the disease. They make it possible for some severe ones to appear. Some biological test for susceptibility or for determining whether or not an individual has had poliomyelitis has been sought by numerous investigators for some time. A recent announcement by Jungeblut[9] of a positive response in individuals who have definitely had the disease when tested with an intracutaneous injection of killed virus appears significant. The reaction is apparently an allergic or sensitization affair. It deserves further study for clinical application.

If I should have the good fortune and the opportunity to take part in the proceedings of this Society ten years hence the chances are that the clinical and biological studies on poliomyelitis would be the main theme of a paper then. The progress during the past ten years has been in early recognition and the value of serum treatment. The progress in the next decade will quite surely be in the way of prevention, for such is the natural history of the extension of knowledge of the acute infections.

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TUBAL INSUFFLATION IN STERILITY BY THE USE OF AIR PRESSOMETER*

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"And when Rachel saw that she bare Jacob no children, Rachel envied her sister, and she said unto Jacob, "give me children or else I die."

This is the voice of wailing women from the biblical time down to our own. A cry of disappointment, through the inability to realize one's hopes. The desire for offspring is one of the most powerful instincts of humans and failure to realize this desire has caused much unhappiness and often results in divorces.

To realize the hope of having an offspring the primitive woman resorted tothe witch doctor, who with her mystical power could cure her barrenness. Charms and other means of superstition kept kindling her hopes to the years of old age. The woman of the middle ages found solace and hope in her religious devotions.

The modern woman went to her doctor only to be told that her womb was tipped or closed, often suggesting an operation be performed, giving very little thought to the cause of sterility, but much to the bill rendered. Truly the promptness of many men to dilate and suspend without a serious thought to this problem is a sad chapter in surgical gynecology.

Our knowledge of the treatment of sterility has been very incomplete indeed. This gap, however, has been bridged over somewhat by the advancement into two principal lines—first, in the field of endocrinology and second, by the application of the insufflation of the Fallopian tubes, by which the patency or non-patency of the tubes can easily be determined. The credit for the application of this method is given to Dr. I. C. Rubin.

In the determination of tubal patency the method in order to be universally applied had to be free of danger, and patency or non-patency can now be diagnosed by the peruterine air or carbon-dioxide insufflation. The method which I am going to describe presently consists of the insufflation of the tubes with a slow current of air or gas through a uterine cannula under manometric control noting whether the gas enters the cavity or not.

Of all the causes of closed tubes, gonorrhea and puerpural sepsis take the greatest toll. On the other hand many women owe their sterility to an innocent peritonitis produced by an attack of appendicitis. In such cases pelvic abscess is formed which affects the fimbria and seals them off in the healing process. Also fertile women who subject themselves to an abortion, the first time they become pregnant, have sterilized themselves, sometimes forever through the infection that followed. In these cases again the tubes become sealed off by the inflammation that follows the infection. It is in these cases where the utero-tubal insufflation is of pathognomonic value.

I believe, however, that insufflation tests should precede any other attempt to ascertain the cause of sterility, except that of determining the fertility of the male. In all cases insufflated it was found by many workers that upward to 60% had closed tubes. Out of these an average of 40% could be opened by repeated insufflation. One out of six of the 40% became pregnant before the end of the second year.

The method of procedure in arriving at a diagnosis after the fertility of the husband is assured, is to take a history especially pertaining to menstrual history, gonorrheal infection, puerpural complication or any history of local peritonitis. After a physical examination including a bimanual examination, the examination of cervix and cervical secretions, the insufflation is done.

When should the test be done? The best time for the test is about ten days after the menstrual period. The tenth to the eighteenth day is considered the most fertile period; impregnation is most likely to occur at that time. The test, if the tube was found to be not patent should be repeated at monthly intervals at the same time with reference to menstrual cycle. Three insufflations with failure to obtain a subphrenic pneumo-peritoneum may be taken to prove tubal closure.

Apparatus Used. The apparatus used in some of the clinics is cumbersome and somewhat ex-

*Address before the Staff of the Woodlawn Hospital, Chicago, Ill., October, 1931.

pensive. Irvin Stein, of Michael Reese Hospital, put out a self-retained speculum, which alone retails for $19.00. The apparatus as used in Vienna is a rather inexpensive glass container with a wooden shell with three outlets. The container is filled with water to filter the gas through and the outlets are connected respectively to the gas tank, the manometer and metal uterine cannula.

The apparatus I am using is very simple and compact and has been designed by Dr. Julius Zarcho, of New York. His is designed to use air instead of gas. This apparatus is put out by Becton, Dickson & Company, of New Jersey, and as you will see consists of a pressure bulb of a manometer to measure the pressure and the long cannula with a rubber stopper to fit into the cervix. There is also a container that can be used for lipiodal injections if so desired.

The test is done in the following manner: The patient is put in the lithotomy position. No anesthetic is necessary except of very nervous patients when nitrous oxide or ethylene may be used. I prefer to have the patient stay in the hospital for twelve hours but the work can also be done in the office.

The cervix is now exposed by the introduction of Sims' speculum and the anterior lip of the cervix is grasped with a double tenaculum, after the cervix has been cleared from any mucus and sterilized with iodine or mercurochrome. A probe is now inserted and the direction of the cervical canal is determined. The intra-uterine cannula can be shaped to go in any direction of the cervical canal. The rubber fits tightly against the cervical canal, so as not to allow any regurgitation. A slight traction on the tenaculum makes the rubber fit snugly in the external os. After the cannula is fitted the assistant pumps air slowly until the mercury column indicated in the manometer is raised to 200 millimeters of mercury.

In many clinics CO_2 is used instead of air. The advantage is that it is absorbed quickly, whereas it takes from 24 to 48 hours for air to be absorbed. However, inasmuch as so small a quantity as approximately 30 cc. of air is sufficient with this pressometer, very slight distress is occasioned and the patient may go about her business the next day. A full compression of the rubber bulb, will send the mercury column practically to the top. This is approximately twice as much pressure as is required for the test.

The possibility of peritoneal infection from non-sterile air, i.e., from foreign particles floating in the air, is considered very remote. This can be eliminated however, by filling the glass reservoir, which is used for lipiodol injections with medicated gauze, to filter out those particles.

The symptoms of pertubation are as follows:

1. *The manometer play.* If the mercury in the manometer recedes rapidly with a constant pressure the tube is patent. If the tube is patent the manometer plays between 20 and 70 millimeter of mercury, or it may go up to 100 or even 200 and drop. If the mercury stays up after repeated attempts that is a good sign that there is an obstruction.

In presence of permeable stricture the gas rises to high pressure and drops gradually, steadily with no fluctuations. In case of spasma the pressure rises high, usually between 100 and 200 millimeters of mercury, but when spasma is relieved it drops as in normal cases. A spastic condition can be overcome by preliminary injections of atropin.

Auscultation. 2, On auscultation over the abdomen, the noise of passage of the air through the tubes is distinctly heard and cannot easily be confused with peristalsis or any other noise and the experienced examiner is not easily misled. The passage of air is almost always felt by the patient herself.

3. Of the subjective symptoms, shoulder pain is a most characteristic symptom of the entrance of air under the diaphragm and it can be visualized, fluoroscopically. This symptom is always pathognomonic. The pain sometimes is not felt until the patient takes the upright position, but it is easily relieved by the supine or Trendelenberg position. Sometimes in cases of slow inrush of air the pain may not appear until a day or days after. Pain in the side of the tubal obstruction may be felt momentarily, but it disappears as soon as the cannula is withdrawn from the cervix.

4. Another symptom of less significance is the bubbling noise that one may hear on the mamillary line, when the patient rises from the lithotomy position. The air which up to this time was around the umbilical region rises in small bubbles from between the intestines caus-

ing a bubbling, metallic sound, which may be heard for about 15 minutes or sometimes hours.

5. But with all these signs mistakes are possible and many workers resort to pertublation under x-ray examination. The demonstration of a cycle-shaped air space between the liver and the diaphragm is most certain and the simplest evidence of patency of the tubes.

Localization. The matter of localization of the obstruction is sometimes of importance. It has been found by repeated observation and controlled by laparotomies, as well as lipiodol injections, that when tubes are closed at the uterine end, the pressure rises to 200 and as a rule the patient feels discomfort over the symphysis in the midline referable to the uterus. When the tubes are closed on the isthmi, the same median supra-symphesial discomfort is noted by the patient with slight pain just lateral to the uterus. When the tubes are closed at the fimbria a more intense pain is noted by the patient and radiates well out to the sides. In cases where plastic operation is considered advisable lipiodol injection is indicated. Some men are doing lipiodol injections routinely in place of the Rubin's test. Personally I believe that where no surgery is indicated Rubin's test is a much easier and safer procedure. Lipiodol is more difficult to inject, if it stays within the tubes for a long time, paralyzes the masculature for some time and causes a greater discomfort. Also the danger of infection is greater. Because of its density it carries germs upward much more easily than air,

Contraindications: There are some contraindications to the insufflation test: Gonorrhea, or any other acute or subacute inflammatory condition, is definite contraindication. Profuse purulent uterine discharge, people with uterine tumors, hemosalpinx, hydrosalpinx, or pyosalpinx. People with cardiac lesions or any debilitating diseases. In infective cases the possibility of an ascending infection is a proven possibility.

Danger. There is practically no serious danger following the test. Workers have performed thousands of tests without an accident. Mandelstam of Germany, in 1200 cases, had only a case of skin emphysema. Rubin in 500 cases reports no accident. Rupture of a tube is possible if pressure is very high, and respiratory syncope seen when large amount of gas is injected disappears when the patient is put in a knee-chest position. Gas emboli is a very rare accident.

Therapeutic Influence of Insufflation. The peruterive insufflation, according to Rubin, exerts a therapeutic influence in several ways: 1. By establishing patency of the genital tract from the external os to the abdominal opening of the tubes. 2. It enables the cervix to expel a mucous plug from its deeper portion after the insufflation. 3. By overcoming utero-tubal spasma insufflation prepares the genitals for favorable reception of the spermatozoa. 4. It separates mild agglutinations of the folds of tubal mucose. Straightens out tortuous tubes, dislodges mucus from a narrow to wider part of the tube, separates adhesions of the fimbriated end in many cases requiring 150 to 200 millimeters of mecury.

To Conclude. 1. Air or gas for tubal insufflations for diagnostic purposes can be safely used.

2. Transuterine inflation will reveal the patency or non-patency of the Fallopian tubes.

3. Manometer reading over 150 millimeters of mercury usually signifies obstruction of the inflow of gas through the tubes. Most commonly due to salpingitis.

4. More than 60 per cent of sterile patients have closed tubes.

5. Fallopian tubes with constricted or obstructed lumina may be sometimes dilated enough by the gas to permit the passage of an ovum. Pressure over 200 millimeters is dangerous and should be used with caution.

6. At least three attempts should be made at monthly intervals before one can declare a tube occluded definitely.

7. Peruterine insufflation is a safer, cheaper and better method to lipiodol injections. It can be done at the office.

55 East Washington Street.

SOME CLINICAL AND ROENTGENOLOGICAL ASPECTS OF PULMONARY TUBERCULOSIS*

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The clinical picture of pulmonary tuberculosis presents so many variations that it is rather

*Address before Joint Meeting of Chicago Tuberculosis Society and Chicago Roentgenological Society, 1930.

difficult to classify cases in a manner entirely satisfactory. Physical signs and symptoms may differ in patients similarly classified. The character of the findings in a given case may change with the progress of the disease. The lungs may simultaneously present every type of tuberculosis lesion. Non-tuberculous lesions may complicate the tuberculosis involvement. The greater number of cases, however, present a predominance of clinical manifestations of sufficient uniformity to permit of their being classified in certain groups.

Classifications of Pulmonary Tuberculosis. On a pathological basis pulmonary tuberculosis is usually classified as follows:

Acute Miliary Tuberculosis.
Acute Pneumonic or Caseous
(a) Lobar
(b) Lobular
Chronic Ulcerative or Fibro-Caseous
Fibroid

Based on the extent of the physical or x-ray findings, the symptoms, the complications and the progress of the disease, the National Tuberculosis Association has adopted the following classification:[1]

LESION

Minimal (Incipient): Slight lesions limited to a small part of one or both lungs. No serious tuberculous complications.

Moderately advanced: A lesion of one or both lungs, more widely distributed than under *Minimal,* the extent of which may vary, according to the severity of the disease, from the equivalent of one-third the volume of one lung to the equivalent of the volume of an entire lung with little or no evidence of cavity formation.

No serious tuberculous complication.

Far advanced: A lesion more extensive than under moderately advanced. Or definite evidence of marked cavity formations. Or serious tuberculous complications.

This classification provides for the following groups and sub-groups:

Minimal A	Moderately Advanced A	Far Advanced A
Minimal B	Moderately Advanced B	Far Advanced B
Minimal C	Moderately Advanced C	Far Advanced C

SYMPTOMS

A (Slight or none): Slight or no constitutional symptoms including particularly gastric or intestinal disturbance or rapid loss of weight. Slight or no elevation of temperataure or accelleration of pulse at any time during the twenty-four hours. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent.

B (Moderate): No marked impairment of function, either local or constitutional.

C (Severe): Marked impairment of function, local or constitutional.

Classification of Subsequent Observation. Apparently Cured: All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

Arrested: All constitutional symptoms and expectoration with bacilli absent for a period of six months; the physical signs to be those of a healed lesion; roentgen findings to be compatible with the physical signs.

Apparently Arrested: All constitutional symptoms and expectoration with bacilli absent for a period of three months; the physical signs to be those of a healed lesion; roentgen findings to be compatible with the physical signs.

Quiescent: Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs and roentgen findings to be those of a stationary or retrogressive lesion; the foregoing conditions to have existed for at least two months.

Improved: Constitutional symptoms lessened or entirely absent; cough and expectoration with bacilli usually present; physical signs and roentgen findings to be those of a stationary or retrogressive lesion.

Unimproved: Essential symptoms unabated or increased; physical signs and roentgen findings to be those of an active or progressive lesion.

Died:

This Classification of the National Tuberculosis Association has been universally adopted in tuberculosis clinics and sanitoria, and from a standpoint of utility appears to have proven quite satisfactory. In the average patient it conveys to the clinician a fairly good idea of the type of case under consideration; moreover, it definitely aids in simplifying the discussion and consideration of pulmonary tuberculosis for the many lay persons who are so intimately connected with the communal activities and propaganda relating to this disease.

The clinical interpretation of the lesions in the lung, the relative importance of complications and the evaluation of the degree of impairment of function, local or constitutional, is often a matter of individual viewpoint and as a result of this, we not infrequently encounter differences in opinion, with regard to what constitutes the proper classification of patients.

Acute Miliary Tuberculosis. The diagnosis of pulmonary tuberculosis of the acute miliary type depends to a great extent on x-ray examination. The clinical findings are as a rule, somewhat vague and indefinite, whereas the roentgenological appearance is pathognomonic. A single flat

1. Diagnostic Standards of the National Tuberculosis Association, Sixth Edition, April, 1926.

plate of the chest or better stereoscopic plates are essential in suspected cases. Fluoroscopic examination alone is insufficient, since the even distribution of the tubercules frequently present a homogeneous appearance that may be mistaken for haziness only. I recollect one case in particular, where a patient with a prolonged remittent fever was fluoroscoped and reported as having negative chest findings. Later a diagnosis of tuberculosis of the kidney was made and a nephrectomy was performed. The patient failed to make favorable progress and stereoscopic plates of the chest revealed a miliary tuberculosis of the lungs. Tuberculosis meningitis in adults is usually a local manifestation of a generalized miliary tuberculosis. Occasionally we see x-ray plates that lead us to believe that cases of miliary tuberculosis may recover.

Acute Pneumonic Phthisis. Acute pneumonic phthisis of the lobar type is occasionally encountered in adults. The case is as a rule considered one of frank lobar pneumonia until a crisis fails to ensue or a positive sputum is obtained. Resolution in such cases is delayed indefinitely. The high fever which ushers in the acute involvement may subside to a moderate elevation of temperature which may persist for a prolonged and indefinite period. Some of these cases become chronic. Recovery may occur. Tuberculosis should be suspected in every case of unresolved pneumonia. The greater number of cases ordinarily regarded as acute pneumonic phthisis are probably acute exacerbations of a chronic pulmonary involvement.

Tuberculosis pneumonias in children may be of the lobar as well as the lobular type. The relationship of tuberculosis broncho-pneumonia to measles and to a lesser extent to whooping cough has been frequently commented upon. Children convalescing from the contagious diseases mentioned should in as far as possible be removed from the danger of contact to tuberculosis. A diagnosis of tuberculous pneumonia in a child cannot definitely be made in the absence of a positive sputum.

The x-ray, while of value in outlining the extent of the pneumonic involvement, does not help to establish its tuberculous basis unless corroborative findings in the way of a chronic tuberculous lesion are present or a positive sputum is obtained.

Chronic Ulcerative Tuberculosis. Chronic ulcerative or fibrocaseous pulmonary tuberculosis as a classification is more or less elastic. The pulmonary involvement may be of an acute, semi-acute, chronic or very chronic nature, depending upon whether the caseous or the fibroid element predominates in the diseased process. The size of the lesion and the presence of complications may influence the situation.

To detect the lesion at an early date is, of course, most important. Of almost equal value is the recognition of the character of the pathological process in the lung. Are we dealing with an exudative type of lesion or is the involvement of a discrete type? Is there a tendency towards localization of an exudative process or is a discrete type of involvement spreading? The physical signs indicative of sclerosis softening and cavitation should be familiar to the examiner for the method of treatment and the consequent prognosis depends upon the proper evaluation of the character and progress of the lesion in the lung.

At this point it may be permissible to add that the value of the clinical findings depend upon the precision with which the ordinary technique of physical examination is carried out. Inspection, ordinarily considered elementary, is very important. It is interesting to note how little or how much a clinician may glean from simple inspection. The usefulness of palpation has been pointed out in a noteworthy manner by Pottenger and others. The fine technique of percussion is mastered properly by relatively few clinicians. Most men are content with the ability to percuss out definite and more or less large areas of impairment of resonance. Auscultation is depended upon the greatest extent in the evaluation of the findings, and in this connection it must be remembered that auscultation is never complete unless the patient is requested to cough after expiration. It is at times a good plan to check back on inspection, palpation and percussion in order to properly evaluate the auscultatory findings.

Clinically cases of chronic ulcerative tuberculosis group themselves in four types:

1. Cases where the physical findings are vague and indefinite. Such cases may or may not present very definite x-ray findings. Incipient

cases with a hemorrhagic onset quite often fail to show definite physical findings.

2. Cases with evidence of a tendency toward induration and fibrosis. In such cases the breath sounds over the area involved form the prominent part of the picture if the bronchi are patent. Inspiration and expiration are harsh. Expiration is usually prolonged. The breath sounds may vary from the broncho-vesicular type to the bronchial type, depending upon the amount of induration. Rales may be present, but they are secondary in the picture. If the fibroid overgrowth involves the smaller bronchi as well as the parenchyma the breath sounds may be diminished or absent.

3. Cases with evidences of a tendency toward liquefaction and necrosis, the so-called exudative lesion. On auscultation, showers of moist rales fine, medium or large, depending upon the degree of softening, form the most prominent part of the picture. The breath sounds may be diminished. Amphoric breathing indicative of cavity formation may be present. Cavities, however, may or may not give any physical signs depending on whether or not the communication with the connecting bronchus is interfered with.

4. Cases where complications predominate. The most frequent compilation is pleurisy with effusion. Spontaneous pneumothorax, hydrothorax, and pyothorax are occasionally met with. The findings in the latter conditions vary, depending upon whether the pneumothorax communicates with a bronchus. Emphysema with chronic bronchitis and asthma may be present.

The clinician should check on his findings with x-ray plates. This is necessary in order to better determine the extent of the disease and the type of lesion. In incipient cases with doubtful physical findings the clinician should not depend on the roentgenologist to make the diagnosis. It is quite frequently impossible to definitely diagnose a case of minimal tuberculosis from the findings on the x-ray plate. X-ray plates should be taken at definite intervals during the course of the disease so as to enable one to more accurately gauge the progress of the pulmonary lesion as well as the effects of the treatment outlined. Lipiodol injection should be made where the definite localization of a diseased process is desired.

Fibroid Pulmonary Tuberculosis. Fibroid pulmonary tuberculosis from a clinical standpoint appears to permit of a great latitude of interpretation. Every clinician familiar with tuberculosis work has noted the great frequency with which this diagnosis is made on the basis of a slightly impaired resonance in an apex with some apparent deviation from the normal in the auscultatory findings. Definite fibrosis involving one or both apices usually has a tuberculous basis. Minor degrees of fibrosis are, however, so frequently encountered that from a clinical standpoint one hesitates to designate many such cases as phthisis in the absence of clinical manifestations.

Symptoms. It is not my intention to discuss the symptomatology of pulmonary tuberculosis at great length. While I do not overlook the importance of symptoms especially in cases with vague and indefinite physical findings, yet I do not depend too greatly on symptoms. The presence of definite symptoms is as a rule usually associated with definite physical findings. On the other hand, we meet with any number of cases where the physical signs indicate a far advanced involvement, and yet the symptoms that one would expect in such instances are entirely lacking. The symptoms depend on the toxins liberated by the tuberculous lesions. Exudative lesions produce toxic manifestations. Discrete lesions are less apt to produce symptoms. Fibroid lesions may produce no symptoms unless they are extensive in nature, when they may be associated with signs of emphysema with chronic bronchitis and perhaps asthma.

Tuberculosis Simulating Non-Tuberculosis Lesions. Clinical experience has shown that any type of pulmonary lesion may be associated with the presence of tuberculosis. It is the usual observation that chronic tuberculosis lesions chiefly involve the apices and upper lobes progressing downward, or extend outward from the hilus. The frequency with which basal tuberculosis is met with in the presence of apices and upper lobes that are relatively clear should place the clinician on guard. Any and every type of lung involvement ordinarily considered non-tuberculous may mask a tuberculous process. Chronic bronchitis, bronchiectasis, abscess, or unresolved pneumonia may reveal the presence of tubercle bacilli in the sputum. Asthmatic bronchitis and bronchial asthma are not infrequently associated with pulmonary tuberculosis. In fact, it has been suggested that the tubercle bacilli

may be responsible for allergic phenomena. Repeated sputum examinations for the presence of tubercle bacilli should be made during the course of any chronic respiratory disease.

I wish to digress at this point to discuss the desirability of a more careful consideration of the presence of pulmonary tuberculosis in the management of upper respiratory infections. Chronic nose and throat conditions frequently mask a beginning and not infrequently an advanced pulmonary tuberculosis. Nasal operations and more especially tonsillectomy may constitute a real hazard to the patient with active lung involvement, the responsibility for which rests upon the physician. No operative procedure on the nose or throat for the relief of cough and expectoration should be performed without definitely ruling out phthisis as a causative factor. A diagnosis of no tuberculosis in a suggestive case should not be made without x-ray plates of the chest and sputum examinations.

It would seem unnecessary to remark that in questionable involvement of the larynx it is always advisable to examine the chest for tuberculosis and the sputum for tubercle bacilli. Bronchoscopy performed in the presence of pulmonary tuberculosis may activate and spread the disease.

TREATMENT

We are familiar with the assertion that about 90 per cent. of adults are infected with tuberculosis. We also recognize that certain environmental factors appear to influence the development of active disease. Nevertheless, the exact biochemical changes that render the activation of a latent tuberculosis possible, is still a matter of doubt. Regardless of these changes, the observation has been made that rest, fresh air, and proper diet plus the removal of environmental influences ordinarily regarded as unfavorable will help the individual in his fight against the disease.

Absolute rest is probably the most important measure in the treatment of tuberculosis. I have at times debated the advisability of placing certain patients in a plaster cast from the waist to below the knees, in order to limit physical activity. Clinicians have commented on the salutory effect upon pulmonary tuberculosis of enforced rest resulting from the application of a plaster cast for the treatment of a hip or knee complication or perhaps an injury.

Fresh air does not mean cold air and drafts. Not all patients respond favorably to the vigorous requirements of outdoor life during the winter months. Individualization of cases is necessary. Hemoptysis is not infrequently encouraged by the unusual chilling of patients who are anemic and not robust.

Dietetic studies in pulmonary tuberculosis have produced relatively little from a therapeutic standpoint. I am somewhat inclined toward superalimentation where there is no apparent contraindication for such procedure.

In conclusion may I briefly discuss some phases of artificial pneumothorax, phrenic-exeresis and thorocoplasty. Artificial pneumothorax has definitely established a place for itself in the treatment of pulmonary tuberculosis. Wherever indicated its use, if applicable, is preferable to other methods of collapse therapy. Artificial pneumothorax, once established, should be maintained as long as the pleural space permits of the injection of air under negative pressure. Observations justify the opinion that artificial pneumothorax decreases the mortality rate, ameliorates the symptoms and shortens the period of active involvement. There is also the potentiality of the reduction of the number of open cases of pulmonary tuberculosis by this method.

Phrenic-exeresis or removal of a portion of the phrenic nerve, if successful, tends to paralyze the diaphragm on the affected side with consequent limitation of lung movement. The application of this procedure on a broad scale has been too recent to permit of any but general deductions. It appears a desirable method in cases where artificial pneumothorax is inapplicable, or to supplement the latter procedure in basal tuberculosis of the lung with pleural adhesions.

While phrenic-exeresis in competent hands is a relatively simple operation which carries practically no mortality rate, the after-effects may offer problems of serious moment. It must be remembered that section of the phrenic nerve, if successful, will result in a more or less permanent reduction of from fifteen to twenty per cent. in the total breathing capacity of the lungs. A compensatory hyperactivity of the opposite lung invariably occurs. This hyperactivity may be sufficient to activate a quiescent tuberculosis. I have seen several cases of acute pulmonary in-

volvement in the "good lung" following phrenic-exeresis. Patients with chronic bronchitis and emphysema complicating tuberculosis are poor subjects for this operation.

The phrenic operation accelerates improvement in many cases both unilateral and bilateral, whose clinical course is stationary or in whom a slow improvement is taking place. Cases which are progressing unfavorably seem to derive little benefit. In some instances the unfavorable trend is accentuated. There is no definite standard for this operation. Some cases improve. In many cases the results are disappointing.

Extrapleural thoracoplasty should be considered in the treatment of cases where lung collapse is indicated and where artificial pneumothorax and phrenic-exeresis are not applicable, or fail to produce the desired degree of lung compression.

55 E. Washington St.

THE PRESENT STATUS OF TRAUMATIC SURGERY*

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It is a rare opportunity and an unusual privilege that this occasion offers to discuss the subject of "Traumatic Surgery" with a group of industrial surgeons in this great industrial center. This organization is most familiar with large industries where working conditions are often extremely hazardous, with the coincident frequent injuries, and your intimate contact with all phases of this intricate and involved subject gives you a perspective, a knowledge, and an understanding of the situation that few surgeons enjoy.

The term traumatic surgery has been employed generally only recently, but it is descriptive and comprehensive in its application. The word trauma may be defined in its broadest sense as any force or action which causes a destruction of or a disturbance in the anatomic or physiolgic function of the organism.

It is unnecessary to dwell at length on the increasing number of injuries that are occurring in this age and era when all means of production, tilling the soil, and the transportation of people and materials are being accomplished by every form of mechanization.

It is understood that there should be no effort to create a new specialty in this field of traumatic endeavor, for the distorted physiology and anatomy in cases of injury are often so extensive and so involved from a pathological standpoint that if the most approved sugricel therapy is to be applied then its application must be directed by a broadly trained surgeon who has had a general training and experience.

As a matter of observation it can be stated that under existing conditions a large proportion of the fractures and other injuries are being treated by the so-called general practitioner.

To substantiate the position and justify the thought that a new specialty should not be established, attention may be invited to the situation which arose during the war when an effort was made to classify a large number of the injuries as orthopedic cases. Immediately it was recognized that men so highly specialized in the treatment of the pathology of bones and joints and in the application of some of the elective surgical procedures, did not exist in sufficient numbers to meet the exigency of the situation nor did they possess the broad surgical training which fitted them to meet the emergencies associated with brain injuries, lung injuries and abdominal viscera injuries.

The same general, practical principles and problems prevail in peace time traumatic surgery as it is encountered after automobile and industrial accidents. The present situation in traumatic surgery is comparable to the war emergency. The men who are to care for this class of cases most efficiently must be broadly instructed and trained in all departments of surgery.

There is a generally accepted knowledge that the scientific treatment of traumatic and emergency cases has not improved and advanced in a manner comparable to the achievements in elective surgery, during the past three decades. The reason for this may be found in the fact that there has not been a centralization of a large number of these cases where they could be intensively studied and the results of a given treatment followed up to a correct conclusion. It is not indiscreet nor does it conflict with the facts to state that an effort should be made to correct this unfortunate situation which can perhaps be

*Address before the Chicago Society of Industrial Medicine and Surgery, November, 1931.

illustrated best by inviting attention to the multiplicity of methods employed in treating identical fractures of the same bone. There is no uniformity of opinion on this simple subject. What can be done to rationalize the methods and procedures in their therapeutic application to traumatic cases?

In passing it may be pointed out that the Fracture Committee of the American College of Surgeons is doing some excellent work in this direction in so far as it applies to fractures.

It would appear most desirable for the men and women of organized medicine and surgery to formulate some definite plan of action if we are to have a better understanding and a more universal agreement as to the generally accepted and approved methods for the treatment of the injured. To inspire and stimulate some practical action in this direction the Board of Traumatic Surgery of the American College of Surgeons proposes the following plan:

1. That every influence be utilized to improve the teaching of traumatic surgery in medical schools, which instruction is at the present time, in most instances, deplorably weak, inadequate and ineffective.

2. That arrangements be made for a more complete educational program on traumatic surgery which may be presented at all available professional and public meetings and which knowledge may be disseminated through medical journals, the press and the lay magazines.

3. That there be established a close working contact with large industries to the end that better correlated, and more efficient medical organizations may be perfected in industry.

4. The appointment of a number of commissions the personnel of which shall represent the most advanced thought and the broadest conception of the approved and accepted methods of treatment in the several regional areas of the body most frequently involved in traumatic surgery, namely:

Injuries to the Head.
Injuries to the Spine.
Injuries to the Chest.
Injuries to the Abdomen.
Injuries to the Pelvis.
Injuries to the Hand.

The function of these commissions, as it has been conceived, is that they survey, study and analyze the whole situation and rationalize the methods that are to be advocated and employed in the treatment of the injured.

5. It is proposed that some form of organization be created whereby this assembled knowledge collected by these commissions may be presented in an educational way to the men who are in daily contact with these ever recurring cases. In a word, to render a service to the men in the field by carrying a rational practical plan for the treatment of traumatic cases to the surgeon in the field who is confronted with the emergency.

This may be done as follows:

1. Systematic talks to County Medical Societies on traumatic surgery.

2. Securing of the cooperation of railroad surgeons and utilizing an equipped car to go over their railway system and with trained men demonstrate the accepted methods as formulated and advocated by these commissions. This could be done in conjunction with County Medical Society meetings.

3. Presenting the deductions and conclusions of the commissions to the heads of all medical departments in industry and obtaining their correlation in a standardization of records that can be utilized in a follow up system.

4. Approach the Deans of Medical Schools and secure their cooperation in adopting a rationalized system for teaching at least the fundamentals of traumatic surgery as outlined by these commissions.

5. The establishment of opportunities for Post Gradute teaching.

Many of these thoughts and proposals are plagiarisms. Doctor George Swift and his committee have followed this plan as it applies to injuries of the head and Doctor Allen B. Kanavel suggested the method for carrying the service to men in the field.

Obviously and naturally, there will always be a difference of opinion relative to any rationalized plan of treatment so long as the application of surgical therapy is an art and not an exact science. This is as it should be and only encourages and stimulates discussion, research work, follow up investigation and leads to accepted conclusions.

To point again to the analogy of elective surgery it is conceded that surgery as applied to the treatment of disease of the thyroid, gall bladder, appendix, stomach and many other con-

ditions is fairly well understood, accepted and rationalized.

This same statement cannot be made as it concerns the circumstances connected with the treatment of the injured.

A recognition of the necessity for improved methods of treatment in traumatic surgery will lead to their achievement. Centralization of large numbers of traumatic cases would permit the best opportunity for study, research, follow up and improvement in the application of more efficient care and this should be attempted.

The Workmen's Compensation Laws effect most essentially the relationship of the physician and patient in many traumatic cases and just here there arise questions and problems that must be faced with fortitude, vision, understanding and judgment, unhampered by prejudice, bias or self interest. There is always a diffidence on the part of the medical profession to discuss the subject of mundane financial arrangements but in this ever changing civilization it is recognized that a new relationship between the public and the profession is rapidly evolving and the subject demands consideration. There is at present a popular psychology that the cost of medical care and hospitalization is too high and this thought is shared by some medical men. Admittedly, this is a debatable question.

The efforts of that industrious Committee at Washington in compiling and analyzing data on the Cost of Medical Care, is illustrative of an effort to elucidate this situation. The many articles appearing in the lay press and lay magazines point to the trend of public opinion regarding the physician. The establishment by lay boards of directors of medical clinics for the treatment of venereal diseases and the extensive advertisement in the public press of such institutions is an example. Incidentally, the charge made to the patient in these clinics is less than the usual fee of a physician and in one well known institution it is authentically stated that they have been able to set up a reserve fund of one million dollars. The Board of Directors of this Clinic are being approached and urged to establish a large Hospital and an out patient department for the care of traumatic and industrial cases, this activity to be advertised in the lay press. It is not necessary to point out or emphasize the far-reaching effect of such an activity and is a concrete example of what may happen.

The ever increasing number of part pay or so-called diagnostic clinics that are springing up in all large cities are worthy of comment. Some of these clinics are connected with richly endowed teaching centers and they are in direct competition with the practicing physician and this situation should be given serious consideration.

Large industrial and utility companies are establishing their own medical departments and these organizations are gradually enlarging the scope of their medical activities.

County Medical Societies in some localities have formed corporations for the care of the indigent sick and injured and it has been proposed that the scope of such a group be enlarged to provide for the care of part pay patients and traumatic cases. To what end no one can prophesy.

This is all somewhat of a digression from the subject of traumatic surgery if it is discussed in a narrow sense but the thought back of it is the allied question of contract practice which at present is eliciting so much comment and criticism, some of which is most acrimonious and disturbing. It can be prophesied with safety that contract practice in some form, in connection with traumatic surgery, will persist and be permanent. How can it be regulated, controlled, directed and influenced so that it will not inflict an unfavorable effect on the injured patient and the physician? In the past the term contract practice as it was applied in medicine conveyed the thought of an unethical procedure but since the advent of the full time teaching position and the employment of the highest type of medical men as heads of departments in large industries the work does not imply the odium that it formerly did. Evidently, any financial arrangement that protects and conserves the best interest of the patient and physician and advances the science and art of medicine and surgery, is desirable. The perplexing question is how can any form of contract practice do this. The fundamental basic principle is the welfare of the patient and there should be no conflict here if the contract is narrowly confined to the rendering of direct medical care to the patient by the physician entirely independent of hospitalization. All contracts should be drawn so as to ex-

clude the possibility of the physician or surgeon participating in a self-interested way in the patient's hospitalization.

Every precaution is necessary to limit the financial remuneration of the physician or the surgeon to his compensation for the direct service he gives to the patient. It is apparent that if this could be done it would remove his self-interest in any other service that may be rendered to the patient aside from his individual service. Contract practice can be made to conform to the most ethical standards if this method can be achieved. Organized medicine must think in terms of collective responsibility and not in terms of individual self-interest, in any attempt to influence or control this involved situation.

The average physician is the most pronounced of independent thinkers. By training, experience and habit, he meets exigencies and emergencies as an individual and assumes the responsibility for his action unassisted by advice or counsel. His problem is rarely controversial and he solves it alone. Hence, the difficulty of group thought and action among physicians. Undeniably, the rapidly increasing number of traumatic cases has rendered the subject of the cost of medical care and hospitalization more acute and the finding of a way out is most imperative.

The task is difficult but not insurmountable. Acrimonious discussion or personal or general criticism will not tend toward the solution of the problem and will act only in alienating further the confidence of the public in the medical profession. No field in surgery is more wrapped in clouds of medical intricacies than traumatic surgery nor is there a field in surgery that comes in daily contact with more lives and problems. It affects the individual, the family, the home, the employer and the employe, and even the state.

You are all familiar with the plans that have been formulated and suggested from time to time by individuals for the correction of some of these difficulties but it is most significant that no concerted or collective effort has ever been made.

It seems inevitable that there will occur some change in the financial relationship between the doctor and the public and unless organized medicine faces the situation with courage and vision and discusses it frankly and freely it is feared and predicted that they will have no voice in the control or regulation of these changes. Some statesmen and leaders must arise from the ranks of organized medicine or our freedom is lost and we are doomed to dictation and control that will destroy every vestige of individual thought and action.

ROENTGENOLOGICAL ASPECTS OF CARCINOMA OF THE STOMACH

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In this day of refinements of roentgenologic diagnosis, it seems fitting that on occasion there should be a review of our criteria of diagnosis of some of the commoner lesions, generally considered to have been conquered and set aside in favor of less well recognized fields, and to inquire carefully whether in our quest for new adventures we may not be overlooking the application of some of the newer technic to the lesions which received our major attention in the beginnings of radiology. I therefore wish to direct our attention to carcinoma of the stomach with this object in mind.

The radiological detection of gastric carcinoma depended at first upon the recognition of more or less massive filling defects representing tumors invading the gastric lumen and corresponding fairly accurately with the size and shape of the neoplasm. The diagnostic advance also included other forms of malignant growth which infiltrated the gastric wall without lumenal invasion, detectable because of interference with mobility and peristalsis. It was admitted that very early lesions which had not yet invaded the submucosal and muscular tissues would very likely escape detection, and yet statistical evidence from the larger clinics showed an accuracy of above 90 per cent. (95 per cent. Carman). It was well recognized that such a high percentage of detection of gastric carcinoma did not and still does not obtain in the majority of clinics, though the error is in large part due to misinterpretation of findings as to differentiation between carcinoma, ulcer, perigastritis, and other lesions, rather than failure to recognize evidence of pathology. There are certain forms of gastric carcinoma, for instance, carcinoma mucosum, which may produce extensive involvement of the

gastric lining with changes recognizable with the x-ray study only with great difficulty.

It may be profitable to review briefly the method of study which should be followed in a modern x-ray examination of the stomach with reference to a possible carcinoma.

First, always, comes the screen study, unless one wishes to employ the double meal technic and see the patient fluoroscopically at the time of the second meal, four to six hours after the administration of the first. Fluoroscopically, with the patient erect, one should note:

(a) Form changes (distortions, contractions, filling defects).)

(b) Interference with peristalsis, perhaps better described as suspension of peristalsis in an infiltrated zone. This may be brought out better in some cases by pressing the screen against the abdomen or by pressure with the gloved hand or a palpator under the screen. Antiperistalsis is particularly significant, as it indicates almost with certainty an organic pyloric zone lesion.

(c) In an early case of a flat malignant growth spreading out pancake fashion along the gastric wall without lumenal invasion sufficient to form a filling defect, detection may be possible by finger or palpator compression against the abdominal wall, thus approximating the anterior and posterior gastric walls and bringing out a small defect which would otherwise be hidden by the mass of the opaque stomach content. Here is an instance where it is important to fluoroscope the stomach after the ingestion of only a swallow or two of barium, or near the end of gastric emptying, so that palpation under the screen guidance may bring out mucosal details. Compression with a balloon, especially during the making of film records, is also very helpful. During palpation one must include upward pressure or effleurage to sweep the small amount of opaque material into the fundus and the region of the cardia. The examiner must take pains to turn the patient both to right and to left to see the stomach at all possible angles. Especially in cases of low-lying stomach, one must use this maneuver of sweeping the opaque meal from the dependent portions of the stomach toward the pylorus and toward the fundus. Let us repeat, it is more important to use these palpatory devices with the stomach only partially filled than with the fully distended organ. The guided palpation also aids in the identification and differentiation of extraventricular tumors.

(d) With the patient erect, one sees easily the fluid levels of the opaque meal, with the air of the air pocket above it. This level should be studied to see if there is a quantity of supernatant secretion forming an intermediate zone between the air and the opaque material. If present to a marked degree, hyperacidity is suggested which speaks against carcinoma and in favor of ulcer; whereas the lack of such a layer suggests lack of hypersecretion.

The fluoroscopy may be continued in the horizontal position, prone, supine, or oblique.

Every fluoroscopic study of the stomach should be followed by a film examination—not one film, but a series, some of which should be made with the x-ray diaphragmmed down to the field of any suspected area. Although at times the first film shows unmistakable evidence of a carcinomatous lesion, it is not safe to base a diagnosis of gastric cancer on a single roentgenogram. As in fluoroscopy, the films should be exposed with the patient turned in the optimum position for bringing out the lesion or the evidence which will exclude one. No routine is safe, for what may be an appropriate position for a thin patient, may not be suitable for an obese individual. In fundal lesions the Trendelenburg position may be best. When making roentgenograms in the horizontal position, it may be helpful to have the patient spend a few minutes lying on the right side as a preliminary.

Modern technical perfection demands the use of some artifice for producing compressions, every effort being made to throw the gastric mucosa into relief. An entirely new list of diagnostic criteria have been built up on the basis of throwing into relief the interior of the digestive organs.

Filling Defect in Gastric Cancer. The type of filling defect will depend upon the nature of the malignant growth, whether it is medullary, papillary or scirrhous carcinoma, and in rare cases of mucosal carcinoma a defect will not be seen except under the most favorable conditions. It is often possible to state from the x-ray study the type of malignancy present. From the prognostic standpoint, one wishes especially to know whether a tumor is resectable by radical operation. A sharply defined tumor definitely protruding into the gastric lumen, suggestive of a

polypoid or papillary growth not prone to ulceration present a relatively good prognosis. Deeply ulcerating lesions with well circumscribed boundaries, relatively sharply defined are likely to be resectable. Diffuse infiltrating lesions with very indistinct boundaries are much less likely to be resectable. Lesser curvature lesions are often misleading, being much more extensive than indicated by the filling defect. It is important to bear in mind that greater curvature tumors, especially in the middle third, are often associated with a carcinoma of the pancreas, not at all resectable. The surgical indications will be all the more valuable if the examiner conducts his study, at least the fluoroscopic part of it, with the stomach nearly empty, but under compression.

Some common pitfalls in the diagnosis of filling defects in the stomach should be recalled, such as: 1. The pressure of normal neighboring organs, particularly the colon. This organ distended by gas or other content may be very confusing by its pressure against the greater curvature or the posterior wall. The so-called cascade stomach is perhaps most commonly due to the pressure from the gas-distended colon, especially when the patient is studied in the erect position. Compression of the stomach against the spine, especially a lordotic spine, or against the aorta has in a few cases to my certain knowledge led to a pseudo-filling defect and an exploratory laparotomy.

2. A filling defect in the gastric shadow suggesting an intrinsic lesion may be easily caused in some cases of cancer of the pancreatic head or by a distended gall bladder. Other extraventricular lesions or conditions which may cause an apparent filling defect in the stomach are carcinoma of the transverse colon, mesocolic tumors and chronic perigastric changes. The presence in the stomach of non-opaque food residues, especially curdled milk, may confuse, as also gastrospasm. The latter may even simulate a tumor clinically. Dietlen reports the case of a 39-year-old man with definite gastric clinical symptoms of carcinoma including the roentgenological demonstration of antrum defect, antiperistalsis and pyloric insufficiency, who at operation showed a tumor near the pylorus which disappeared during the resection. Careful pathological study of the resected specimen showed no tumor but a small submucous phlegmon which was finally accepted as the cause of the spasm. Tabes may be responsible for form changes due to spastic contractures. One may even see in carcinoma spastic indrawings, such as are supposed to characterize gastric ulcer. Gastrospasm may be noted in lesions of the gastric or duodenal wall, but also in gallstones, tabes, hyperthyroidism, and hysteria. Exclusion of such causes is greatly aided by repeated study under atropin given to the full physiological effect.

Peristalsis in Gastric Carcinoma. In every carcinoma of the stomach amenable to roentgenologic detection there is some disturbance of peristalsis. Of course, it is conceivable that in the very earliest mucosal stage of a cancer, this malbehavior may escape detection. In the lesions in the lower half of the stomach which have passed the very initial stage, the peristaltic waves halt at the proximal edge of the growth, resuming at the distal edge. Serial or even cinematographic films made in such a way as to permit superposition of shadows to make a composite tracing of a number of shadow records, should reveal positive findings of a sort of "dead" or motionless area, proving a zone of inelastic gastric wall. Naturally, in stenosing lesions, one sees the typical hyperperistalsis of pyloric obstruction, and at times antiperistalsis. It should be recalled, however, that there may be a stage early in the development of a pyloric zone carcinoma when the sphincter is rendered inefficient because held open by malignant infiltration. This stage does not persist after the growth attains advancement sufficient to stenose.

Mobility of the Stomach. Normally the stomach exhibits considerable mobility. In carcinoma this mobility, or movability, especially of the pyloric end, may be considerably diminished. This is true to a lesser extent with ulcer, both showing less free active and passive movements than the normal stomach. Very marked restriction of mobility speaks aganist operability.

Gastric Motility. The emptying time of the carcinomatous stomach is usually normal or accelerated unless the lesion is situated near the pylorus and produces stenosis. The quick clearance is due both to the achylia present in a large percentage of cases, and to a disturbance or absence of pyloric reflexes (Haudek). In general it may be said that gastric carcinoma causes no

delay in the gastric clearance. Only when the pylorus is primarily or secondarily involved in the malignant disease does retention appear. Practically, it is well to note retention carefully as it has a bearing on the surgical indication, favoring a gastroenterostomy even in cases evidently not suitable for resection, providing any surgery at all can be considered.

Carcinoma of the Cardia. About 10% of malignant tumors of the stomach are situated at the fundus. When the cardia is involved, there is to be expected secondary stasis in the more or less dilated esophagus. Indeed, as pointed out by the writer in 1913, one of the first manifestations of such malignant infiltration into the cardiac sphincter area may be a marked cardiospasm, which only later comes to be recognized as due to carcinoma. Examination of the esophagus and stomach simultaneously visualized, maintaining the patient in the horizontal or Trendelenburg posture, will be of help in differentiating early cardiospasm from malignant disease of the cardia. The esophageal dilation in idiopathic dilation of the esophagus (achalasia of the cardia) is much greater than that ever attained in malignant disease.

In fundal carcinoma every resource of the roentgenologist will be taxed, including air distention, change of position, compression by hand, palpator or balloon, and the use of both screen and film records.

Carcinoma of Body of Stomach. This lesion constitutes about 20% of gastric cancers; it is relatively rare on the greater curvature. No particular description is needed; unless an organic hour-glass stomach is produced sufficient to cause stenosis, there is no gastric delay.

Pyloric Carcinoma. Malignant disease of the stomach involves the pars pylorica in about 60% of cases. This tumor is often palpable, and often associated with retention. Here we find the largest proportion of operable growths. Yet one is confronted here also with the greatest liability to error with very early lesions. Once again let us refer to the newer method of compression on a slightly filled stomach to bring out the mucosal relief.

Generalized schirrous carcinoma of the stomach is usually recognizable if one is not too sparing with his film records.

The differential diagnosis, especially with reference to benign gastric tumors, constitutes another chapter into which space here does not permit incursion. Pedunculated myoma and other tumors, neuroma, lipoma, syphilis, and foreign bodies, such as hair balls, all come in for consideration.

Summary. The technic of examination and the diagnostic criteria in relation to gastric cancer are reviewed.

Special reference is made to the thoroughness of the roentgen diagnostic technic, and recommendation for the adoption of the technic of visualization of the internal relief of the stomach to bring out mucosal details as the best means of earlier diagnosis.

IMMUNIZATION BY MEANS OF BACTERIAL ANTIGENS

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Many volumes have been written on this subject and it is obviously impossible to exhaustively deal with it in a single, necessarily brief, paper. However, owing to much of the experimental work being reported only in the technical journals, and therefore not readily available to the physician in active practice, I will review briefly only some of the more important and later advances on this subject.

While prophylaxis is also of great importance to the physician, we will concern ourselves more with the treatment of actual existing infections.

We all are aware that a more solid immunity usually results following natural recovery from an infectious disease and that living viruses are more potent for this purpose than the various modifications heretofore proposed. This indicates that the ideal antigen is a modified form of a living virus, exemplified particularly in the use of smallpox vaccine.

Except in this particular instance, and possibly a few others, the inherent dangers have often weighed against it. However, it probably holds the greatest hope for success.

We have, therefore, turned to some other modification to be used as an antigent. The best known of these antigens, the bacterial vaccines, have been used for the past twenty-five years with more or less reported success, but it is impossible, at present, to determine accurately their scientific value. Reports in the literature

are extremely conflicting and depend to a great extent upon the attitude of the physician. Nevertheless, their continued use and proven value in prophylaxis would indicate that they possess great possibilities.

Further, I believe it is not out of order to state that there are many apparently uncontrollable factors which determine the ultimate results, such as the nature of the infection, constitution of the individual, method of administration, composition and method of preparation of the vaccine itself, et cetera.

Many agree with Kolmer "There must be something of real merit in this therapeutic field to have had vaccine therapy survive all the defective technique and abuses committed in its name during the past several decades."

Bacterial antigens must, of necessity, include not only the protein of the bacterial bodies themselves, but also other proteins, especially the class known as toxins, elaborated by certain of them. Bacterial toxins are apparently of greater prophylactic than therapeutic value and, as you are well aware, have been modified in various ways for clinical use, particularly toxin-antitoxin mixtures and formalized toxins and otherwise modified toxic filtrates, under the genral name toxoid. So also bacterial bodies are used either as heat, or chemically killed organisms, or combined with antibodies (sero-bacterins) or various extracts (immunogens) or two more recent modifications, anti-virus and bacteriophage.

All true bacterial antigens, so far as we are aware, are protein in nature and, of necessity, foreign to the tissue cells; they are also in the colloidal state. While certain physical and chemical modifications do not denature them sufficiently to prevent their stimulating a specific response when injected into the body, harsh treatment such as coagulation, renders them useless or impotent, that is incapable of eliciting such a response.

Immunization by means of these antigens for prophylactic purposes probably depends upon the specific antibody production resulting. For therapeutic purposes, however, nonspecific effects, also, have great importance. The clinical use of bacterins to produce the most satisfactory result, obviously requires the use of the specific antigen concerned in the patient's infection to stimulate the production of specific antibodies as well as produce collateral nonspecific effects. Obviously antigens cannot be of value unless the patient's cells are capable of responding in a typical manner. We have, thus, two major factors; the proper antigen and, of equal or greater importance for therapeutic purposes, the ability of the patient's cells to respond. It is obvious that if the patient's cells respond, a nonspecific effect may be produced by any antigen.

The physician has little or no control over the first, except in so far as he may attempt to determine the specific antigen or organism actually responsible for the infection. The antigen he uses comes to him, in most cases, ready prepared; its exact method of preparation and the antigenic value upon which it depends are beyond his control. Therefore, there is a vast field of possible error in the selection and preparation of the antigen that may often doom his results to failure at the very onset.

The other factor, the patient is more or less under his control and judgment, as to the ability of the patient's cells to react following a suitable dose at proper intervals. The latter must depend upon the physician's judgment and experience.

As to the antigent itself, there are many points of interest that do not actually concern the physician, except in an academic way, however, I believe I have indicated in general the great possibilities for failure due to the improper selection of the type of antigen or its improper preparation.

Of the various methods of administration, it is obvious that, except in certain special cases, oral administration, owing to the possibility of the antigen being digested and thereby denatured, thus losing much of its specific nature, is not the preferable method at present. Subcutaneous administration has been the general rule, although intramuscular use is also advantageous. Intraperitoneal, intraplural and even intravenous administration have their advocates, and possibilities. Recently, however, intracutaneous injection has been observed particularly in localized pyodermic infections to be much more important than heretofore surmised. This has received considerable impetus lately following the work of Besredka and his theory of local tissue immunity or resistance, a condition that unquestionably exists although the Besredka theory of its mechanism is not generally accepted.

One of the greatest difficulties in therapeutic

immunization is due to the fact that all inclusive generalizations are too prone to follow results in a single specific disease. An outstanding example of this followed the results of Behring with diphtheria antitoxin. It was immediately considered that all infectious diseases were toxemias and that it would be only a matter of time before antitoxins or serums for all of them were available and equally as efficient. In pure toxemias the results have been good, with others the efficiency is less.

The therapeutic value of antibacterial sera depends upon antibodies which require complement and, in some cases, the ability of the patient's phagocytes to function.

The most important reason for the lesser efficiency is the extreme specificity of these sera. They are specific for the homologous type of the organism and of little influence over any heterogeneous type.

In diphtheria bacilli we have at least five immuniologic types distinguished by the action of the antibacterial antibodies, but all five types produce toxins identical in effect and all are neutralized by a single antitoxin. This is also true of the tetanus bacillus.

It may be interesting to digress here for a moment to consider the recent work on antigens which may throw some light on the above statements. Recent work with pneumococci, particularly by Avery and his associates, has shown that the specificity of a bacterial antigen may be determined by a carbohydrate linked chemically to the protein. He has isolated a definite polysaccharid, found abundantly in the capsules, from type III pneumococci, which is not an antigen itself, but which when combined with the bacterial cell protein, or even some other protein, will produce specific antibodies for type III pneumococci and will protect animals against type III pneumococcus infection. This carbohydrate alone, that is uncombined with protein, does not produce immunity and type III pneumococci, devoid of the carbohydrate, produce only a species specific immunity for pneumococci that will not protect the animal from a virulent type III pneumococcus infection. Therefore, the carbohydrate determines the type specific response and protection, whereas the pneumococcus bodies produce only a species response.

From this it naturally follows that the use of a bacterial antigen, made from type III pneumococci, but containing none of the specific carbohydrate, will be of little or no value in an infection produced by type III virulent organisms as the antigen used is not type specific.

Such carbohydrates have been found in a number of diverse organisms (pneumococci, streptococci, staphylococci, meningococci, tubercle bacilli, Friedlander, influenza, typhoid bacilli and yeasts) and may serve to explain failure of proper therapeutic response following the injection of bacterins prepared from species specific, but not from type specific organisms.

Thus we see that the greatest hope for therapeutic immunization in certain infections by means of bacterial antigens, lies in their proper preparation from the specific type of organism containing the type specific carbohydrate, and satisfactory results will probably not be forthcoming otherwise. This selection of the proper organism for the preparation of a vaccine or other bacterial antigen apparently is of major importance, particularly so since our knowledge of types of the various species of bacteria are being most profoundly modified at the present time.

Just as the chemist's conception of matter as being composed of unchangeable atoms which was considered a proven fact for many years has recently been upset completely by the new electron theory, so also, the bacteriologists' idea that a definite morphology and colony type was unvarying, is now being upset. Morphology and cultural characteristics have passed as criterions of bacterial species.

Although it is true that different types among certain organisms of the same species were detectable principally by immunilogical tests, it is only recently that definite variations in the cultural and morphologic appearances of a single species of organisms have been definitely recognized.

We now have S and R types, smooth and rough, depending upon the appearance of the colony, in general the S forms being more virulent; also a series of intermediary forms, variously classified as SR or O types. In some instances, however, the R type is the more virulent. Very recently it has been shown by Hadley, that there is a filterable form of many organisms called by him the G type. Professor Kendall, Northwestern University, by means of his new K medium, is able to readily grow this filterable form and

has been able to change it from the filterable to the nonfilterable form and vice versa.

It is too early as yet to determine the nature of these G forms and their value as bacterial antigens. However, Hadley has apparently definitely demonstrated, what many have long believed, that bacteriophage is not a living virus, causing lysis of bacteria. He believes bacteriophage consists of the G form of the organism and states, "Indeed, it appears highly doubtful that even the most voracious strain of bacteriophage ever actually 'destroyed' a bacterial cell. The true function of the bacteriophage is not to destroy, but to transform them."

In the light of this work the theory that bacteriophage caused lysis of the organisms and thereby destroyed them in the body is untenable. It will be necessary for us to revise our theory of bacteriophage action entirely. While it appears that when bacteriophage is added to a culture of actively growing organisms, they apparently disappear, they have not been lysed or dissolved, but have merely changed their cyclo stage to that of the G form. This may explain also why bacteriophage is not active except in rapidly growing cultures capable of making such a change. The statement that bacteriophage, when filtered through a Birkefeld filter and tested by ordinary methods, was sterile, does not hold true, as both Kendall and Hadley have demonstrated.

This so-called sterile material contains living cultivatable organisms, provided the proper medium is supplied, and these organisms may, by proper cultivation, be reverted to the original morphology and cultural characteristics. Kendall has also demonstrated that these G forms are present in Besradka's antivirus, therefore, it would seem that some substance or condition tends to cause the organisms to change their cyclo stage, whereby they are no longer recognizable as the original organism by the previously commonly accepted bacteriologic technique.

These G forms have been noted and described by bacteriologists even in early times, but their exact significance was not understood and many times they were considered mutations. The Munch granules of the tubercle bacilli which were among the first described, probably belong in this category.

Our ideas of immunity are also definitely changed, the two well known theories, the phagocytic theory of Metchnikoff and the humoral or chemical theory of Ehrlich have been found inadequate. There is now ample evidence that a third factor exists, an additional cellular effect, somewhat similar to Metchnikoff's, which concerns the active part played by the reticuloendothelial system, particularly the cells known as clasmatocytes. The work of Gay and his associates on resistance to disease, particularly local resistance, is extremely interesting and he has shown also that we may produce, by intradermal injection of antigens, better protection against an intradermal infection, than when immunizing doses are given otherwise. He has also shown that this resistance depends upon the clasmatocytes. Of great interest, particularly bearing upon the action of bacteriophage and antivirus, are his results with injection of plain broth. He has shown that particularly the meat extractives in plain broth, if injected intradermally, produce complete protection against a hundred minimum lethal doses of a streptococcus that produces erysipelas.

He has also shown, in a series of very carefully controlled experiments, that by the intraplural injection of plain broth, there is rapidly produced a greatly increased clasmatocyte count, seventy-five times as great as that normally found. The injection of several times the fatal dose of streptococci into the plural cavity of an animal so prepared is followed by sterilization of that cavity in from three to six hours; the animal not succumbing to the disease, and there is no negative phase. He has also proved that skin, muscle and connective tissue possess this protecting mechanism. Therefore, apparently three factors are, at least theoretically, concerned in immunity, the clasmatocytes, antibodies and leukocytes.

Clinically, interest at present is actively concerned with two of the later developments in the treatment of infections, bacteriophage and antivirus. There are many reports in the literature concerning their value. However, the theories of their action are rapidly undergoing change. These reports, as with the reports of results following the use of bacterial vaccines, are confusing. The consensus of opinion is that while the reports of excellent results following their use vary from forty to ninety per cent., results may be expected in approximately fifty per cent. of a large series of cases.

While these products are apparently in the opinion of many, quite diverse, yet it will be easily recognized, from a consideration of the previously mentioned facts that they may have much in common.

Bacteriophage is prepared by adding a small amount of phage to an actively growing culture which is then incubated and which results in apparent lysis, with the disappearance of the organisms, a clearing of the fluid, in about six hours. This is then filtered through a Birkefeld filter and is ready for use. It contains meat extractives and peptones from the medium and the products of bacterial metabolism. While it is sterile to the usual bacteriologic tests, nevertheless has recently been proven not to be so as it contains the living G form of the organisms. It also contains a substance that tends to perpetuate the so-called lysis.

The antivirus of Besredka is prepared by growing the organism in bouillon for a long period of time, filtering and reinoculating until further growth does not appear. After the last filtration, it is apparently sterile, like bacteriophage, but only apparently so. It also contains the meat extractives and peptones of the original culture medium, as well as the products of bacterial metabolism, and as shown by Kendall, living cultivatable G forms of the organisms. It would appear, therefore, that there is not a great difference in these two products, with the possible exception that bacteriophage is more powerful in effecting a change in the cyclo stage of the organisms. Antivirus is more heat resistent than bacteriophage and that possibly antivirus may contain relatively more specific bacterial antigen and possibly bacteriophage.

They are used in an identical manner, either as wet dressings applied to the lesions, or normal skin, preferably after it has been prepared, in order that absorption may take place, or by subcutaneous or intradermal injection.

It would appear that the immunity, or resistance, conferred by these products may be both specific and non-specific in nature, due to the stimulating effect upon the clasmatocytes, by the meat extractives contained, and also, to the modified yet specific bacterial proteins present. The value or part that the living filterable form of the organism, as found in these products plays in this process is as yet undetermined.

It is difficult to evaluate the causes of failure in any series of cases in which these products are used, owing to the diversity of factors involved. However, it may be presumed that when these products are used, and the patient's cells be not overwhelmed as to be incapable of responding to the stimulus, results should be forthcoming. Why certain observers report excellent results in a large majority of cases, may well be due in a large measure, to the use of a proper antigen, as well as the experience of the observer, as regards his technique and the selection of cases.

The question naturally arises, if local tissue resistance sufficient to protect an animal against an infection may be produced by meat extractives, why use bacteriophage? Undoubtedly, the answer is because of the specific bacterial proteins or antigens contained in these products. It has been repeatedly demonstrated by clinical observation that a staphylococcus preparation is of moderate or no value in a colon bacillus infection and the advantage, therefore, of these products over simple meat extractives, lies in their content of specific bacterial antigens.

Further, it has been shown, in a small series of carefully controlled clinical cases by Larkin and Pratt, that the use of bacteriophage produced results in a much greater per cent. of cases of local infection than did either plain broth or bacteriophage from which the so-called lytic principle had been removed by charcoal. This would appear to indicate that while the nonspecific effect produced results in a certain per cent. of cases, yet the combined specific and nonspecific effect produces results in a much greater percentage.

Bacteriophage and antivirus, owing to the method of use and results claimed being practically identical, will be considered together. There is some evidence that it is essential to use a bacteriophage having a powerful effect upon the particular organism causing the infection in the case to be treated. Many observers even suggest that the action of the phage be tested upon the organism isolated from the case. This would again point to the specificity of the antigen.

They may be used as a wet dressing, preferably applied to the lesion or to the normal skin after it has been prepared by slight abrasion to insure absorption. Local applications are also

made in the form of a jelly. These wet dressings may be continuously applied, or in ambulant cases, only at night.

Two routes of injection are employed, first, subcutaneously into normal tissue, or into the lesion (this latter is avoided by some observers), second, intradermal injection. In local pyodermic infections, this is probably more efficacious and smaller doses are used.

The dose varies from one-fourth to two, or even four cc., beginning with a smaller dose and gradually increasing if a reaction does not occur.

The intervals between doses may be twenty-four to seventy-two hours.

Reactions with small doses are few, local and of little consequence. Systemic reactions are extremely rare. Local anaphylactic phenomena following repeated doses intradermally in the same site may be severe, showing infiltration, edema, sterile abscesses and even necrosis at the point of injection. This is the so-called Arthus phenomenon and indicates a local tissue sensitization. It is extremely rare in man following subcutaneous injections.

Results are usually prompt, pain is frequently relieved in twenty-four hours, often less, and apparently many local infectious processes are aborted, otherwise their course is more rapid, and the purulent discharge when evacuated, is more fluid than usual. The remaining lesion heals more rapidly, resultant scarring is reduced, due to more rapid healing and limitation of the destructive process.

In deep seated furuncles, cessation of pain, liquefication and reduction of induration and resolution often occur in a few days.

In chronic infections, while improvement is possible in most cases, it has been noted to be more rapid where a local reaction occurs at the site of injection.

The results in the pustular form of acne, while excellent in the occasional case, are rather disappointing.

This is the preferable method of treatment for local, encapsulated, pyodermic infections, especially in certain regions where surgical interference may be fraught with serious consequences, such as the nose, cheek and upper lip.

In general, toxemia and the accompanying depression and pain are rapidly relieved. Excellent results are reported in practically one hundred per cent. of cases of impetigo in children particularly in the epidemic variety, by simple local application.

Local superficial colon bacillus infections are also amenable to this treatment. Colon bacillus pyelitis, however, only occasionally responds, probably due to the original lesions being in the intestines, which are the source of the bacteria.

Two cases of staphylococcus meningitis have been reported to have been rapidly relieved by the intradermal and intraspinal use of staphylococcus bacteriophage and it is also reported of value in the treatment of streptococcus and staphylococcus colitis. It appears to be of no value, however, in staphylococcus pyemia, or other blood infections.

It would seem that the use of bacterial antigens in the treatment of infections, even as at present practiced, holds an undoubted measure of value. All observers are practically unanimously agreed that the procedure presents but little possibility of danger and further does not interfere, nor is it interfered with, by other methods of treatment commonly employed. Therefore, notwithstanding that while this method is lauded by some and decried by others, it would, nevertheless, be the logical procedure on the part of the physician in the hope that a fair proportion, at least, of his cases will be decidedly benefited thereby.

CONCLUSIONS

Prophylactic immunization by means of bacterial antigens is of proven value and depends largely upon the specific antibody response.

Therapeutic results are due to both specific and nonspecific effects.

The selection and proper preparation of the antigen are of great importance.

The route of administration and dosage are also factors influencing the result.

Bacterial antigens are not contraindicated in acute infections, even if generalized.

Therapeutic immunization is relatively without danger and holds ample promise of distinct value in many cases.

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THE INJECTION TREATMENT OF VARICOSE VEINS

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Few, if any innovations in modern therapeutics have met with such instant and almost unanimous approval and acceptance by the medical profession as the treatment of varicose veins by the injection of sclerosing solutions. Therefore, unprecedented interest is shown in this now accepted and standard procedure whose wide acceptance is due in a very large measure to the French clinicians Sicard, Paref and Forestier. The injection method is now the method of election and, when indicated, entirely supersedes surgical excision except when, on account of special reasons or contraindications, it is not applicable. Following its successful employment, there is in addition to the obliteration of the varicose veins an early disappearance of the co-existing edema, swelling, tired feeling, and leg, ankle and foot pains. The injection method has been so extensively and satisfactorily applied and clinically reported upon in such large series of cases by different operators all over the world, that its value and superiority over other existing methods is now firmly established. It is an ambulatory method of treatment, inexpensive in nature and calling for no rest in bed and no detention from work. Unlike operative measures, it entails no disfiguring, no mutilating scars; but, like many of the operative procedures on varicose veins, it is at times followed by recurrences. It is most desirable that the drawbacks, inherent to the method itself, or that complications arising from its faulty application should be brought out and clearly understood. It is one of the principal objects of this paper to so review recent important reports on the subject as to direct notice to the limitations and shortcomings of the method. Only the most valuable contributions will be discussed.

Statistical Data. Omitting minor reports, the literature of the past couple of years contains important series of cases of varicose veins and varicose ulcers treated by the injection method. Most of these reports include a fair proportion of cases in which the varicosities were complicated by hemorrhage, ulcers of varying area and depths, edema (lymph and venous) and inflammation, acute or chronic.

Schmier reports approximately 3,000 cases of varicose veins with more than 10,000 injections; Hayes made 10,000 injections in over 1,000 patients in a period of 8½ years; White treated 750 cases; Logefiel 500 cases with over 5,000 injection treatments, with 41 failures; Kilbourne collected 4,607 cases from 34 hospitals; Fraenkel in less than 3 years made 7,000 injections in 1,013 patients, without any serious mishap; Pennoyer in one year made 500 injections in 218 cases; Riehl treated over 1,000 cases with good results; Zimmerman over 4,000 injections in 600 patients within 3 years with no serious complications; Levi made 4,000 injections within 4 years; Wright cured 324 of 478 cases of varicose ulcer within 2 years; Angle reports 2,500 injections; Matyas over 200 successfully treated cases; Cavallucci 156 cases complicated with eczema or ulcer; Gillespie and Strobell 405 injections in 81 cases; Ferguson and Loefflad 72 cases with 510 injections; Stuebner 104 cases with only one failure and 96 per cent. of ulcers cured.

In October, 1930, in a study of the subject, I reported my experiences with 300 patients who had taken a complete course of the injection treatment. Forty of them had varicose ulcers and a much larger number presented an eczematous condition of the skin.

Sodium salicylate in 20 to 40 per cent. solution was used. There was no fatality. Temporary cramping and edema were observed in a large number, sloughing occurred in several cases. In four, the recovery from these sloughs was very tedious. There was a recurrence of the varicosities after several months in 12 cases. I still continue to use, preferably, sodium salicylate in solutions of different strengths, as it has now given me most satisfactory and most gratifying results in over 900 cases. The injection treatment has the advantages of painlessness, simplicity, safety and efficacy. It can be employed in patients of any age. It appeals to patients as it does not call for either anesthesia, local or general, or for hospitalization. In fact, it is purely an office treatment and the use of the limbs following the injection minimizes the incidence of embolism; the danger of embolism with the infection treatment is practically nonexistent.

A general consideration of the clinical reports to be found in the medical literature shows that in from 80 to 85 per cent. of the cases the treatment is followed by good and apparently permanent results, satisfactory to the patients. The failures of the injection treatment are due to diagnostic errors, to the employment of unsuitable solutions, to faulty technic or to improper post-injection care. A small percentage of recurrences is observed after the treatment and this is easily understood, because we have as yet no precise knowledge of the exciting causes of varicosities. The recurrence of the condition in my cases was due rarely to the recanalization of the obliterated vein; most always the recurrence was due to pre-existing non-varicose veins becoming dilated, elongated, tortuous and varicosed.

Clinical experience has brought to light some of the disadvantages of sclerosing solutions formerly and now in use. Added clinical experience has begotten improvements in technique and in selection and in post-infection treatment of cases. Some of the earlier used solutions, although they were effective in obliterating varices, have been discarded because they caused either dangerous or undesirable local or systemic reactions, and have been replaced by more effective mixtures, causing minimized reactions, having a more rapid action, and allowing multiple injections at one sitting without too great inconvenience to the patient. The ideal, of course, would be to obtain a sclerosing substance which would cause rapid thrombosis and have little or no effect on the perivascular tissues even if some escaped during the injection. With the injection method, it is quite possible to initiate a course of treatment, interrupt it and start it again at will. Clinical experience has shown that the solutions of sodium salts have the most marked sclerosing action, but their use is attended, at times, by most marked cramping and perivenous reactive effects; the sugars (dextrose, invert sugar) used alone, are much less irritating but must be employed in larger amounts to be effective. The sclerosing agents in use determine an endovenitis: irritation of the venal endothelium, congestion, cellular proliferation, connective tissue formation and final conversion of the injected vein into a fibrous strand.

Perusal of the literature shows that an ideal sclerosing solution has not yet been found, nevertheless the sodium salts (the chloride or salicylate) alone or admixed with one of the sugars secure a satisfactory and rapid sclerosing action. These salts are effective on the vein intima. They are, however, irritant and toxic to the perivenous tissue and a painful or inflammatory reaction follows when they escape into the perivenous tissues.

A mixture of sodium chloride and dextrose (sodium chloride 30 per cent.; dextrose 50 per cent), mostly in equal parts, is preferred by many, such as Strickler, De Takats, Angle, and McPheeters (who also uses a mixture of invert and cane sugars with sodium chloride). Smith reports excellent results with 50 per cent. dextrose solution and with quinine and urethane, the latter especially in cases that are not severe.

In England, sodium morrhuate has been used extensively. Levi has not seen a single ulcer following 4,000 injections of sodium morrhuate. Payne prefers it for injecting thin-walled veins. Wright claims 324 cures out of 478 cases of indolent varicose ulcers, treated with five per cent. sodium morrhuate. Though Higgins and Kittel recommend this sclerosing agent and claim: 1, That it is free from the risk of generalized toxic effects; 2, That the phlebitis it induces is effective and complete; 3, That the risk of local complications is slight; and 4, That the treatment is as free from pain as can be reasonably expected from any artifically induced inflammatory process, yet a few alarming accidents following its use have mitigated against its more general adoption and have shown that it is not an agent entirely devoid of danger.

Calarose, a mixture of invert and cane sugars, continues to be used to some extent in Germany, and White reports good results from Genevrier's solution.

Maignon, Grandeclaude and Lambret use a solution of 50 to 75 per cent. of glycerine in distilled water. In experiments on dogs, this has proved more sclerosing than the injections commonly employed and is, according to the authors, much less liable than the organic solutions to cause harmful reactions. In the human subject, it has been tried in many cases with great success, especially in aged persons. If spilled in the perivascular tissues, it causes neither local nor general reactions. All the above mentioned sclerosing agents are marketed in suitably prepared ampoules of appropriate dosage.

Multiple and Massive Injections. The great improvements in sclerosing agents have led to the practice of multiple injections at one sitting, and a more rapid extension of this practice in the future is expected as patients seemingly have no more trouble with several than with a single injection. The saving of time both for physician and patient is considerable. The comparative absence of any severe pain with the newer sclerosing agents is a factor. McPheeters prefers to treat the whole case at one sitting, whether on one or both legs. He has as yet found very few imitators. In very large varicose veins, Scott prefers twin injections in the vein made simultaneously at 3 to 5 inches apart.

Regarding massive doses, Louvel shows that since the use of caustics was seen to be without apparent clinical harm, massive doses were used with impunity. But such massive injections have a tendency to surpass their avowed object of obliteration of the vessel. The reaction to the caustic not alone involves the endothelium and the muscular coat of the vessel but the adventitia also, affecting the vasa venorum and the meshes of the sympathetic nerve supply. The result may be a veritable perivenous sympathectomy with paralysis which cuts off the blood supply from the adjacent venous walls. It is better that the adventitia be spared as much as possible from the effects of caustic agents and that massive injections be avoided.

Failures Following the Injection Treatment. Jentzer observes that the injection method of treating varicosities fails in from 3 to 4 per cent. of the cases without know reason. De Takats and Quint had 10.8 per cent. of failures in their fully treated series of cases. The failures occur especially in cases: 1, With long saphenous veins wide open with incompetent valves so that back pressure may canalize the created thrombus. Recanalization is nature's natural effort to restore the lumen if the thrombus is not firm or hard; 2, With large saccular dilatations with intima not intact and with extensive scar formation (such an intima does not react to a bland stimulus); 3, In whom the Trendelenburg test is doubly positive indicating a reflux from the deep circulation as a result of incompetent valves in the anastomoses between the superficial and deep venous systems.

Fatalities and Other Complications Attending the Injection Method. Though the injection method of treating varicose veins is completely successful in the very great majority of cases, not infrequently there are rather serious complications, not generally due to the method itself but rather to improper or unskillful applications of it. These complications come under the headings of fatalities due to embolism or other cause, of sloughs and necroses at the site of injection or of abscesses from infiltration of the perivenous tissue by the sclerosing fluid.

The most extreme asepsis must be observed throughout this treatment. Oftentimes asepsis is entirely disregarded and the work is done with no attention paid to asepsis. McPheeters saw a case in which a fatal staphylococcus infection undoubtedly resulted from the injection treatment, and Isaak reports a case in which the pus of an abscess at the site of injection showed B. coli and streptococci.

There are, according to Laqua, nine deaths from embolism following injections from varicose veins, reported in the literature up to 1929. Kuhnau reports a case of fatal embolism in a man, shortly after the injection of calarose for occlusion of varicosities in the right leg. The saphenous vein had not been ligatured. Anschutz and Lohr report a case of fatal embolism following sodium chloride injection.

Mundt's fatality was due to chemical nephritis. The patient was a woman of 58. Sodium salicylate was first tried, beginning with 5 cc. of a 20 per cent. solution divided into three injections. As this had little effect on the varices, two days later 5 cc. of a 30 per cent. solution was injected and continued until a 40 per cent. solution was used and a total of 20 cc. of it injected. Then mercuric iodide and quinine and urethane were tried. The woman died some months later from acute chemical nephritis complicated by pulmonary edema and cardiac failure.

Comparing fatalities from embolism in surgical excision of varicose veins with their occurrence in their treatment by injection, Hope-Carlton showed that there is one death from embolism in every 100 surgical excisions. Kilbourne in his statistics of 4,607 cases of injection states that there is one death from embolism in every 250 surgically excised cases and that there are other surgical complications in about 1 per cent. Laqua states that the mortality from surgical excisions due to wound complications, post-operative pneumonia and embolism varies

from 0.5 to 1 per cent. but that in injection treatment it is only 0.02 per cent. Scott in 10,000 injections saw no case of embolism and many other reporters of large series of cases say the same thing.

Domanig compares the surgical and injection methods of treating varicose veins on the basis of 200 cases. Of these, 43 cases were treated operatively; there was one fatality from embolism and one non-fatal embolism. Seventeen cases were treated by operation combined with injection; there was one severe thrombosis with no infarct. Over 100 cases were treated ambulantly by injection; except in four cases which showed some slight inflammation, there was no complication.

Strickler thinks that when the patient is injected in the upright rather than in the recumbent position the danger of embolism is better avoided, and De Takats says that the logical way to prevent ascending thrombosis is by ligating the saphenous vein high up. This was done in 61 of his cases without mishap except for two cases of thrombosis distal to the ligature.

Green and Greene observed a fatal thyroid crisis precipitated after an injection treatment for varicose veins.

Apart, however, from fatalities, some fairly serious complications occur in a fair percentage of cases treated by sclerosing injections. Many of these are undoubtedly due to faulty or careless technic. Occasionally they happen when the greatest care is exerted. Sloughs occur more frequently than would be supposed from the literature. They are associated with the passage into the perivenous tissues of the sclerosing solution as by direct injection, or by leakage through the hole or holes made in the vein, or by bursting of the latter through overdistention. They are characterized by pain at the site of injection. Prolonged pain at site of injection is almost a positive sign of perivascular infiltration. The slough will not be recognized until a few days after the injection when either a bleb appears at the site of injection or an eschar resembling a bedsore occurs. A thin-walled vein transfixed by the injecting needle, may burst under the pressure of the injected fluid. Leakage may follow the withdrawal of the needle.

Perivascular infiltration results in a localized gangrene area which will slough leaving a deep crater-like ulcer which heals slowly (Smith). Kilbourne remarks that such necrotic areas may not heal for months or for years and he knew of a 14 months case.

Zimmerman thinks that sloughs do not occur more frequently than 1 in 1,000 injections. De Takats in more than 3,000 injections (50 per cent. dextrose) had not a single slough. Logefiel in 5,000 injections observed 3 severe sloughs, due to extravascular leakage from the puncture wound. In 3 other cases there was an ascending chemical phlebitis. Stuebner saw perivenitis in 1.06 per cent. of his cases and slough in 0.4 per cent. of his cases. Payne recorded 13 cases of chemical gangrene in 1,500 patients, and Higgins 12 in 200. Ferguson and Loefflad in 510 injections saw necrosis at site of injection in 2 cases.

Anschutz and Lohr state that in Laeven's case injection of mercuric iodide for varix led to phlegmonous gangrene which necessitated amputation of the foot five weeks after the last injection.

Pennoyer in 218 cases with 500 injections saw 6 resulting ulcers all due to faulty technic. In Gillespie and Strobell's 81 cases, 6 developed a marked chemical phlebitis and in 11 there was some sloughing at the site of injection.

Higgins recommends withdrawal of blood from the vein before injecting the chemical and also advises to retain the needle in the vein for a minute or so following the injection as well as applying pressure over the site.

Harcourt, when the injection has been made and before the needle is withdrawn, re-injects (by a stop-cock arrangement connected with the syringe) a few drops of the withdrawn blood thus clearing the needle of sclerosing substance and preventing trailing it through the tissues on withdrawing the needle. Smith says that a slanting position of the needle during the injection has no advantage, but only makes for confusion as the vein may be missed or torn with subcutaneous oozing.

McPheeters things that when a slough develops excision and immediate suture with non-absorbable material is probably the best mode of treatment. The following precautions must be taken in making the injection:

1. Have a good light. The injections may be made with the patient standing, sitting or lying down, preferably the latter.

2. Employ a sterile technic, a 26-gauge needle, preferably with a short bevel. If the

bevel of the needle is too long, the vein may be transfixed. If the bore of the needle is too large, leakage may occur.

3. Make the injection accurately into the lumen of the vein. The injection must be intravenous, never peri- or paravenous. Aspirate blood in syringe before, and at short intervals, while injecting so as to make sure that the needle is in vein.

4. Stop the injection immediately when there is doubt as to whether or not the solution is going into the lumen. The injection must be made intravenously not paravenously. If the patient complains of acute pain, determine its location and character. If it radiates along the course of the vein, it does not call for the cessation of the injection.

Yearly inspection is advisable. Neighboring superficial veins not infrequently dilate abnormally, becoming varicose and necessitate appropriate treatment.

A word should be said here in regard to the use of vein occluders. McPheeters, Carter, and several others, have devised metallic ring or wire occluders. Strickler uses a stethoscopic tubing occluder. Schmier recommends the double tourniquet method and Herzberg has devised a very ingenious double ligature apparatus consisting of two metal bands connected by a sliding handle. Very efficient work can be done without the use of any of these devices.

Recurrences. The question of recurrence is an important one as permanency of cure is one of the chief criteria when judging the value of the injection method as compared with the surgical excision of varicose veins. Laqua's statistics show that there is no recurrence in from 85 to 100 per cent. of the injected cases according to different authors. His figure for recurrence by this method is 14 per cent. for the average, while for surgical excision he considers there is from 20 to 40 per cent. of recurrences. Levi states that recurrence follows in 30 per cent. of surgical excisions, while Schwarz and Ratschow cite this figure as varying from 15 to 50 per cent.

Kilbourne's statistics give recurrence in 6 per cent. of injected cases. Gillespie and Strobell found 3 recurrences in 81 cases (nearly 4 per cent.). De Takats found the percentage higher, i. e., 10.8 per cent. in his series of patients who took the full course of treatment. He thinks that patients should be re-examined every three months during the first year. Also, that if the legs are not bandaged for some time after injection, the recent artificially formed thrombus may canalize and an early recurrence result. While such recanalization of thrombi may undoubtedly and does occur, yet, as Holman remarks, new varices may appear unquestionably due to failure to produce thrombosis up to the entrance of the saphenous vein into the femoral vein. Unwillingness to inject the saphenous vein near the fossa ovalis because of the danger of embolism may make a combination with surgery necessary.

The frequency of recurrence by recanalization is supported by the findings of Howard, Jackson and Mahon. Of 66 patients treated by them for varicose veins with sodium chloride (20 per cent.) 49 were examined a year or so following treatment. Of the 49 there was a recurrence in 48. There was recurrence in 79 per cent. of all patients treated and in 98 per cent. of all patients followed a year or more. This recurrence was by recanalization and the authors consider that interruption of the continuity of the vein by excision, especially in the presence of incompetent saphenous or perforating valves, is held to be vital in securing permanent relief. This high percentage of recurrences has not been noted by other observers.

The one most commonly discussed shortcoming of the injection treatment of varicose veins is the high percentage of recurrences. Recurrences are due to:

1. To the fact that the underlying cause of the condition is still present.

2. Too great dilution of the sclerosing fluid or insufficient concentration of the fluid.

3. Failure to thrombose the great saphenous vein in the thigh completely even to the saphenofemoral opening.

4. Normal recanalization, which is nature's natural effort if the thrombosis is not firm and hard.

To prevent recurrences:

1. Locate the great saphenous trunk and sclerose it up to the saphenofemoral opening.

2. Empty the veins before injecting, to aid concentration.

3. Localize the sclerosing fluid by the use of tourniquets or the Mac occluders, so as to prevent excessive dilution.

4. Choose sclerosing solutions according to

the type and size of veins; for the small, thin-walled veins use milder solutions, such as invert sugar. For larger saccular veins, I always use either 20 per cent. or 40 per cent. sodium salicylate solution. Many clinicians use dextrose with sodium chloride combinations and for the pickups, the quinine and urethane solutions.

5. Continue treatment until all the varicose veins are sclerosed satisfactorily. Palpation of the injected vein shows at first a slightly tender hard cord-like structure with some induration. There may result a local pigmentation which subsides entirely in a few weeks.

6. Have the patient return in two months after discharge for check-up and at longer intervals after that. Relapses are best managed by early treatment of the newly developing varicose veins.

7. Employ judicious after treatment: Forbid wearing of tight elastic garters. Advise against long maintenance of standing posture.

8. Remove any cause of obstruction to venous return-flow, as pelvic tumors.

9. Have patient avoid abdominal straining, such as excessive efforts during defecation, micturition, etc.

The Treatment of Varicose Ulcers. The curing of inveterate varicose ulcers by the injection and sclerosing of corresponding varicose veins has been one of the remarkable results of this method. Varicose veins impede the return of the blood, lead to congestion, impair nutrition and cause ulceration. Wright reports that within the past two years he has treated and cured 324 out of 478 cases of indolent varicose ulcers by injecting the highest veins with sodium morrhuate. Following the injection, the leg is firmly encased from foot to knee with a 3-inch spiral adhesive bandage overlaid with splints to avoid slipping. Any discharge will seep through the bandage and should be washed off with soap and water. The nearer the base of the ulcer is to the underlying bone, the slower will be the healing. The interval between the first and second treatment varies from two days to two months according to circumstances. When healing is complete support is given by a Unna bandage. Most of the cases were cured within a few months. Many of these patients had refused recommended amputation.

Pennoyer reports 26 cases of long-standing indolent ulcers cured by the injection method; Stuebner saw 96 per cent. of his ulcer cases similarly cured. Isaak insists that varicose ulcer of the leg is most successfully treated by obliteration of the varicose veins; he had remarkable cures in 100 cases of extensive crater-like ulcus cruris. He states that the frequently deep and extensive ulcers that are caused by embolic occlusion of the veins and surrounded by healthy skin, heal rapidly and permanently. Baker had successfully combined Unna's paste boot (continuous pressure) with injection of varicose veins in cases of varicose ulcer. Dainow treated 18 cases of varicose ulcer successfully with injections of acetylcholine hydrochlorate; 17 were cured in less than six weeks.

Contraindication and Precautions. The general contraindications to the sclerosing treatment of varicose veins and varicose ulcers remain about the same. It is important to elicit a thorough history and to make a complete physical examination. The contraindications follow:

A. *Systemic Diseases:*

Hyperthyroidism; active tuberculosis; acute colds; infections.

B. *Local Conditions:*

Impairment of the arterial circulation as in Raynaud's disease, in thrombo-angeitis obliterans; in lack of patency of deep veins; as in phlebitis of the deep veins in acute or subsiding superficial phlebitis.

In addition to the above some consider diabetes, cardiorenal disease, and arteriosclerosis as contraindications Higgins includes phlegmonous alba dolens and intermittent claudication. Pregnancy during the early months is not a contraindication nor are border-line cases of cardiorenal disease. If the varicosities are secondary or consecutive to an obstructive lesion in the pelvis, the causative lesion calls for removal.

To test blockage of the deeper veins, apply a constrictor about the thigh while the patient is standing and the superficial veins are engorged. The patient then walks about or works his leg actively. Due to the pumping effect of the alternate muscular contraction and relaxation the return of blood through the deep veins is facilitated and if these are patent the veins will empty. If the deep veins be competent, injection of the superficial varicose veins is permissible. The aim of treatment is to obliterate the superficial

varicose veins, and to utilize the deep veins for the return circulation. In a few cases, the saphenous vein will require ligation.

Avoid injecting irritating solutions in thin-walled veins which might easily rupture under injection. Make the injections from below up. Veins about the site of an ulcer should be avoided because the area is usually infected. Gillespie and Strobell introduce the needle in the skin at some distance from the varix and traverse quite a thickness of subcutaneous tissue before entering the vein.

Generally, when the injection of a certain solution fails to give results it is better to change the technic rather than persist with heavier injections of a solution which does not act.

Keep in mind that every dilated vein is not necessarily a varicose vein. The symptom may be due to some other condition than varicosity (arthritis deformans, flat-foot, pregnancy, etc.).

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CANCER AND THE PUBLIC HEALTH*

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Cancer is on the increase; there is no doubt about that. As a cause of death it has advanced from fifth place twenty-five years ago to second place today with an increase in frequency of 47 per cent. in men and 21 per cent. in women —a situation that most certainly demands attention from those concerned with the Public Health. The attitude, I fear, of most of us is that cancer is a hopeless and fatal disease and little or nothing can be done about it. But isn't this just about the attitude of the public and the medical men toward tuberculosis at the beginning of this century—thirty years ago? And today, with education of the public with regard to early symptoms, the better education of medical men in the recognition of early signs with the improved facilities for treatment throughout the state, the death rate from tuberculosis has been more than cut in two.

Tuberculosis is a disease of early adult life occurring usually between the ages of fifteen and forty years, and with the decrease in deaths from

*Read before Section on Public Health & Hygiene, Illinois State Medical Society, May 7, 1931, E. St. Louis.

tuberculosis those who escape it live to reach the cancer age which is forty and beyond.

It has been estimated that the decrease in tuberculosis has added ten years to the span of human life—the greatest public health achievement of all time.

What is true of the tuberculosis campaign is true of infant welfare—every man is first a child and to become a man he must escape the hazards of infancy and childhood. These hazards of infancy and childhood are very real but fortunately again with the education of the public and increased efficiency of our medical men and better hospital and public health facilities the chances of a baby growing up are more than twice as good as they were twenty-five years past. A quarter of a century ago about 17 per cent. of all babies born died before they were a year old; at the present time this mortality has been reduced to only 7 per cent. and it should be further reduced to at least four per cent. for the country as a whole.

Malaria has disappeared with the draining of the land and the same is true of typhoid fever with the disappearance of shallow wells and improved sewage disposal. Diphtheria, the scourge of childhood, is under almost complete control and if I can read the signs of the times scarlet fever, the other really serious childhood menace, soon will be. Cutting down these hazards of infancy, childhood and early adult life means that people live longer.

We still have more than enough tuberculosis, twice too much infant mortality, and little or nothing has been accomplished in eliminating the acute respiratory diseases, but more has been accomplished in ridding the human body of disease in these past fifty years than in the whole previous history of the world.

But with these remarkable gains in the conservation of human life new problems present themselves—people live longer, it is true, but are confronted with a whole new set of diseases —the diseases of adult life. These are the diseases of the heart and blood vessels and cancer. They have displaced the diseases of infancy, childhood and adolescence as the most important causes of death and are now the real menaces that should be "viewed with alarm."

Of course, we cannot expect to live forever and would not want to, but a disease like cancer that takes a mother of forty away from her growing children or the death of a father at fifty that keeps the boy out of college is a real economic disaster but worse than that, in cancer, the death sentence lasts for several years, the pain is usually excruciating and literally the victim "dies by inches." Heart disease, cerebral hemorrhage, nephritis, arteriosclerosis are an economic loss but as a rule are painless—not so with cancer.

And cancer is increasing.

The startling rate of increase in cancer deaths in recent years can best be expressed in the so-called life tables used by the insurance companies. These tables show the probability of death from all causes from the first to the last year of life. After these computations have been made, a similar calculation can be made for any given disease or group of diseases and on the basis of deaths per hundred thousand tabulations or charts of the probability of death from any cause can be estimated.

Louis Dublin,[1] statistician of the Metropolitan Life Insurance Company, has constructed such tables for the years 1910, 1922 and 1924 from experience of the United States Registration Area. He has made separate tables for men and women which illustrate graphically the alarming increase in cancer in so short a time as fourteen years. On the basis of these life-probability tables between 1910 and 1924 there has been an increase of 47.3 per cent. in cancer in males and 21.4 per cent. in females.

How different are the life probability figures for tuberculosis. In males there has been a drop of 38 per cent. and in females a drop of 33.2 per cent. in the same length of time.

One may conclude from these figures that we are saving our babies, the children, and our young folks in order to give them a chance of dying of cancer.

This may be true, but it is only when we come to analyze cancer deaths according to groups and kinds that we can begin to see daylight. All cancers are not alike—cancer of the stomach is not the same as cancer of the breast—in fact cancer is not a disease in the usually accepted definition of the word but is a large group of heterogenous malignant growths affecting all the different parts of the body with widely varying degrees of severity depending upon the char-

1. Health and Wealth, by Louis I. Dublin, Harper & Bros. 1928.

acter of the cancer cells and the rate of their growth.

Some of these cancers are hidden and others in plain view, some may be recognized early and others only after they have become advanced; some are susceptible to treatment, others are resistant.

In cancers of the stomach and intestine (which are essentially hidden from view and whose symptomology is vague) there has been an increase of 2 per cent. a year and at the present time account for thirty-six per cent. of all cancer deaths.

In cancer of the mouth (including lips, gums, buccal cavity and tongue), which can be seen readily every day by anyone using a mirror, in these past fourteen years there has been a decisive and unmistakable decline. Such is the importance of early diagnosis.

While cancer of the intestinal tract has been increasing with such rapidity the death rate from cancer of the female genitalia—uterus and breast—has remained stationary—due I believe to improved diagnosis in part at least but especially to improved methods of treatment. By this I mean the introduction and improvement of radiation therapy by penetrating x-rays and radium either alone or in conjunction with surgery. In cancer of the skin the death rate is stationary. Thus in certain groups of cancer the rate of increase is stationary or declining. These are the cancers of the skin, mouth, breast and uterus.

In another group the rate of increase is alarming—these are the cancers of the stomach, intestine, lungs, pleura and urinary tract.

It is significant that in the first group radiation therapy—x-ray and radium—have proven their worth and it is not too much to say that they are responsible in a large part at least for stopping the upward march of the mortality figures.

That x-rays and the gamma rays of radium are more lethel to cancer cells than to normal cell growth in an established basic fact of years standing but like the development of the automobile it is a long way from the two cylinder horseless carriage of 1910 to the 8 cylinder smooth running powerful cars of today.

The radiation of cancer today represents as much of an advance as a powerful and effective agent as the present day automobile does in comparison to its predecessor—the "horseless carriage."

Larger quantities of radium with heavier filtration, more powerful x-ray machines with many hundred times more penetrating rays together with standardized surgical procedures make the future less gloomy than it appears to be at first glance.

"A forty-seven per cent. increase for males and a twenty-one per cent. increase for females in so short a time as fifteen years ought to call for a sharp revision of our conception of the seriousness of the cancer problem as it now confronts us. Particularly should the attitude of the medical and public health professions toward this disease be revised. The efforts which have been made during the past ten years to deal with cancer are, in light of our figures, relatively puny." (Louis Dublin.)

Cancer is not hopeless and incurable, it is not a disease of old age alone but occurs in adult life during the most productive years. Progress is and can be made to overcome it.

"Where we ought to be spending millions for research we are spending thousands; where we have a few hundred physicians trained to recognize and treat cancerous states we need thousands." (Dublin.)

What are we going to do about it?

PERSISTENT VOMITING IN A NON-GRAVID NULLIPARA CURED BY DILATATION AND CAUTERIZATION OF THE CERVIX UTERI

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Davis[1] reports a case of pernicious vomiting of pregnancy in which vomiting ceased after dilating a rigid, thickened and tightly closed internal os. At autopsy, two retention cysts were found in the cervix. In discussion of this paper, Wylie holds that dilatation of the cervix in primiparae will stop vomiting in four out of five cases and Dudley states that he stopped it in two cases by tapping the cysts of a lacerated cervix. Dudley gave medicine by mouth in addition. Miller[2] calls attention to a rigid external os as a frequent cause of nausea in pregnancy, stating that

dilatation of the cervix will relieve vomiting of pregnancy in certain cases.

The present paper deals with a nongravid nullipara with no history of a preceding pregnancy. The following points were of interest in her past history. She was born Dec. 9, 1908. In the fall of 1927, a leucorrheal vaginal discharge began and gradually became continuous and profuse. In February, 1928, the appendix was removed and the uterus was suspended by the Baldy-Webster method. Preceding this operation, the patient's weight had averaged 118 pounds, but it never exceeded 102 pounds following the operation.

Vomiting first began in December, 1928, when the patient vomited three to five times daily for two weeks. She had headaches during this period. Beginning again in October, 1929, the patient vomited for a month from three to five times daily. The third period of vomiting began in March, 1930, averaging from three to ten times daily till August 12, 1930. During this period her weight fell progressively from 94 to 77 pounds.

I first saw the patient on July 25, 1930. She had been treated previously for gastric ulcer, but her symptoms did not suggest this condition. Physical examination revealed little of importance excepting marked emaciation, a median operative scar below the umbilicus, and chronic endocervicitis with profuse leucorrheal discharge. The patient failed to respond to medical and dietetic treatment.

On August 21, 1930, I dilated the cervix with a Goodell dilator and cauterized its mucosa with an electrically heated wire cautery without anesthesia. Since then there has been practically no vomiting; the leucorrhea has ceased; the cervix has presented a healthy appearance, and the patient has made a steady gain in weight. She is enjoying excellent health. On Sept. 23, 1931, she weighed 117 pounds.

This paper calls attention to the importance of endocervicitis in the etiology of persistent vomiting in nongravid nulliparae. In the present case, dilatation and cauterization of the cervix evidently cured the patient.

1. Davis: Trans. Amer. Gynec. Soc., 19:110, 1894.
2. Discussion of Granger's paper: New Orleans Med. and Surg. Journal, 56: 445, 1903.

RHINOPHYMA

M. A. Glatt, M.D., F.A.C.S.

Associate Surgeon, Illinois Eye and Ear Infirmary; Clinical Associate Eye, Ear, Nose and Throat, Loyola University. Attending Otolaryngologist, Lutheran Memorial Hospital.

CHICAGO

Rhinophyma is a nodular growth involving the integument of the nose and often spreading to the cheek and upper lip. The mucous membrane of the nose is not affected, in contradistinction to the very rare entity, known as rhinoscleroma. In the latter condition the nodular growths begin in the vestibule of the nose and extend to the septum, tubinates, pharynx in its inward progress and to the lip and cheek in its outward progress.

Rhinophyma usually occurs in men who have been excessive users of alcohol. The process has its inception in the early stage as an acne rosacea. The pathologic findings are the same, except, that in the rhinophyma there is an extreme hypertrophy of the connective tissue and cystic degeneration of the sebaceous glands. These cysts at times suppurate and form ulcers. No other complicating pathology has been found in any of the cases reported in the literature. However, during my recent visit at the Neuman Clinic in Vienna, I had the opportunity to observe a patient with an extensive rhinophyma, which upon removal of a portion of the mass, showed it to be complicated with carcinoma. An ulcerating gumma of the cheek and a positive Wassermann were other incidental findings.

The only successful cure for rhinophyma is its surgical resection. X-ray and radium exposures are inadvisable due to the vulnerability of the nasal cartilages to these agents. J. W. Malniak[1] reported a case of rhinophyma where a subsequent plastic operation became necessary following its removal with a galvanocautery. The use of the electro-coagulating current is also contraindicated as the experience with its employment in the above cited case in Vienna has proven. One of the alar cartilages and a part of the tip were lost after removal of a small portion with this current. The hypertrophy extends to the very substance of the cartilaginous framework of the nose, and it is, therefore, extremely difficult to limit the coagulating current to the mass only. Even very firm pressure is at times not tolerated by the nasal cartilages. This was noted in a patient at the Illinois Eye and Ear Infirmary who happened to be an unrecognized hemophiliac. A septum operation had been at-

tempted on his nose and abandoned on account of the uncontrollable hemorrhage. A pressure bandage applied to the nose resulted in a sloughing of the greater alar cartilage on one side.

The hemorrhage that accompanies the resection of the growth is profuse, but, as a rule, these patients are of a plethoric type and are not much affected from this loss of blood. However, when the growth is bilateral, I found it advisable to be conservative with the operative procedure by removing one side at a time several weeks apart.

Under block anesthesia the dissection is begun at the free margin of the ala of the nose with a very sharp knife or razor. The deep dissection is done best with strabismus scissors. By exposing a part of the alar cartilage it enables the operator to judge the depth of the mass and thus avoid extirpating any portion of the cartilage with it.

To facilitate hemostasis and bandaging without undue pressure I resorted to the use of the continuous mattress suture. The dermal material formed a net over the denuded area and the ends were used to tie a gauze sponge saturated with tincture of benzoin compound. On the fourth day the bandage and sutures were removed and the excess granulation tissue cauterized with silver nitrate 25 per cent. Cauterization must be often repeated to assure an even surface for the advancing growth of skin. Complete epidermization was affected in this patient four weeks following each operation without skin grafts, although the denuded areas were each the size of a silver dollar.

In very extensive growths uninvolved skin areas can often be found between the crowded lobules of the mass. These should be conserved as skin islands to help in the healing process. Skin grafting may at times be required to hasten the healing and prevent scarring when the growth is extremely extensive.[2]

REFERENCES

1. Maliniak, J. W. Rhinophyma, Arch. Otolaryng. 13:270 (Feb., 1931).
2. Salinger, S. Rhinophyma, Arch. Otolaryng. 12-401 (Sept., 1930).

3254 Lawrence Ave.

Book Review

PRACTICAL ENDOCRINOLOGY. By Henry R. Harrower, M.D. Glendale, California, Pioneer Printing Company, Inc. 1931.

The literature on internal secretions is now so voluminous that the general practitioner, however great his interest, does not have time to familiarize himself with it in detail. The interest among the rank and file on the subject of endocrinology is so widespread that a comprehensive volume on the subject is doubly welcome. This work should meet the present demand of every practitioner.

ALLERGY AND APPLIED IMMUNOLOGY. By Warren T. Vaughn, M.D. Illustrated. St. Louis. The C. V. Mosby Company. 1931. Price $4.50.

This is intended as a hand book for physician and patient. The volume represents a comprehensive discussion, in non-technical terms wherever possible of the most recent development in the diagnosis and treatment of the allergic disease and diseases associated with allergy.

HOW'S YOUR BLOOD PRESSURE? By Clarence L. Andrews, M.D. New York. The MacMillan Company. 1931. Price $2.50.

This work is intended for victims of "Blood Pressure Psychology" who because of hearsay, misinformation, and inability to separate cause from effect live in constant fear of some impending body calamity which may never occur, so far as blood pressure is concerned.

ONYCHOLYSIS: AN INDUSTRIAL DERMATOSIS

H. J. Templeton, Oakland, Calif. (*Journal A. M. A.*, Dec. 26, 1931), reports five cases of onycholysis. The patients were new employees, apparently healthy, who developed black spots under their fingernails within forty-eight hours after beginning work washing paste from labeled bottles. Within a few days the nails loosened from the nailbeds at these areas. The process was without symptoms. The nails regrew in from four to six months. Investigations revealed no specific industrial irritants at fault. The author believes that the disorder was precipitated by maceration of the tissues by prolonged immersion in water plus, possibly, the mechanical insult to the tips of the fingernails from picking at resistant pieces of paste. But back of all this, in his opinion, was some personal factor which made the nails separate from the nailbeds more easily than would those of normal individuals.

MENINGITIS CAUSED BY FRIEDLÄNDER'S BACILLUS

According to Karl Rothschild, New Brunswick, N. J. (*Journal A. M. A.*, Dec. 26, 1931), cases of meningitis caused by Bacillus mucosus-capsulatus (Friedländer's bacillus) are usually fatal. Only three cases in which the patient recovered have been reported; in all these the diagnosis is not satisfactorily confirmed. The author presents a case in which Friedländer's meningitis was associated with a subdural abscess, following mastoiditis. The same micro-organism was found in cultures of the abscess and of the spinal fluid. By bacteriologic tests the micro-organism was identified as Bacillus mucous-capsulatus (Friedländer's bacillus),

with the characteristics of the most frequent type of this group. The patient recovered completely, representing the first case with recovery reported in the American literature and the first nonfatal case in general in which definite bacteriologic tests were made. A survey of the literature is also presented.

ACUTE SUPPURATIVE CONDITIONS OF HIP JOINT

Guy A. Caldwell, Shreveport, La. (*Journal A. M. A.*, Jan. 2, 1932), presents a summary of the treatment and end-results of eighteen acute suppurative conditions of the hip joint. A review of the end-results indicates that ankylosis or pathologic dislocation is the usual sequel when the primary site of infection is in the intra-articular bony structures, whereas an excellent functional result is the rule when the process begins in the synovial membrane. Drainage of the hip by anterior or posterior incision does not limit joint motion when there is primary synovial infection. Ankylosis usually develops in spite of drainage by incisions when the condition is primarily osteomyelitis or epiphysitis draining by way of the hip joint. Roentgenograms should be made from time to time after drainage has been established in an acutely infected hip joint in order to determine whether there is bone involvement, and if bone destruction is apparent an effort should be made to provide drainage by some other route than through the hip joint.

MASSIVE UNATTACHED RETROPERITONEAL TUMORS: AN EXPLANATION OF UNATTACHED RETROPERITONEAL TUMORS BASED ON REMNANTS OF THE EMBRYONIC UROGENITAL APPARATUS

G. H. Hansmann and J. W. Budd, Iowa City (*Journal A. M. A.*, Jan. 2, 1932), report seventeen retroperitoneal tumors which were not attached to adult urogenital organs. All the tumors were similar to tumors which arise in the adult urogenital organs. Retroperitoneal tumors collected from the literature, integrated with the material described by the authors showed that most all tumors which occur in adult urogenital organs may occur free along the course of development of the urogenital apparatus. The concept that they arise from remnants of the urogenital apparatus is the most logical explanation of their histogenesis.

SUBSEQUENT COURSE OF FORTY PATIENTS WITH ACUTE "DRY" PLEURISY

Marshall N. Fulton, Providence, R. I., and Richard G. Hahn, Boston (*Journal A. M. A.*, Dec. 26, 1931), review the records of 639 patients with pleurisy. One hundred and forty-nine of these were acceptable as instances of acute dry pleurisy. The subsequent history of forty of the latter during a period averaging seven years has been obtained by correspondence or examination. In four of the patients pulmonary tuberculosis developed, in three of them within one year after the acute pleurisy. The remaining thirty-six are in good health. The authors believe that while one should appreciate the likelihood that an acute dry pleurisy may be an early manifestation of tuberculous infection, their study suggests that pulmonary tuberculosis is apt to develop in fewer of the cases than has been taught previously.

PSEUDOPREGNANCY

Donald Macomber, Boston (*Journal A. M. A.*, Jan. 23, 1932), reports two cases in which there was evidence of decidua formation when the stimulus of an embryo was not present. In both cases menstruation was delayed and it would seem that there had been a condition of pseudopregnancy comparable to what occurs in the rabbit and ferret after sterile coitus. In one case it seemed fairly obvious that the decidua was formed as a result of the trauma of an operation. The actual determining cause in the other case is unknown. The occurrence, however, in either case offers considerable support to the theory that pseudopregnancy occurs regularly in the human female preceding menstruation.

Society Proceedings

ALEXANDER COUNTY

The Alexander County Medical Society held its annual dinner meeting and election of officers at the Halliday Hotel, Cairo, Ill., December 22, 1931. The following were elected to serve for the year 1932:

President, Dr. Flint Bondurant; vice-president, Dr. Edward Miller; secretary-treasurer, Dr. James S. Johnson; censor to serve three years, Dr. H. A. Davis; censor to serve two years, Dr. R. E. Barrows; Censor to serve one year, Dr. B. S. Hutcheson; delegate to State Society, Dr. James S. Johnson; alternate, Dr. Phil McNemer.

Seventeen members of the Society attended the dinner, which was held in the Blue Room of the Halliday Hotel, immediately following business meeting. Dr. R. E. Barrows served as Toastmaster.

James S. Johnson, Secretary.

OGLE COUNTY

The Ogle County Medical Society held its January meeting at the Collier Hotel, Rochelle, Illinois, on January 14, 1932.

Due to the severity of the weather the business of the meeting was dispensed with to allow the large number of visiting friends to leave earlier.

Dr. Chester Guy, Chicago, gave a very instructive lecture, "Common surgical mistakes as seen by the Pathologist." Some of the warnings of Dr. Guy:

1. Avoid most operations following skull fractures.
2. Close Chest wounds without drainage.
3. Do not look too long for foreign bodies.
4. Do not overlook common duct stones in gall tract operations.
5. In operations for chronic appendix—do not be satisfied with an examination of the appendix only.

6. Study carcinoma cases for metastasis. Especially examine the liver before any radical excision in any organs.

Dr. L. H. Sloan, Chicago, gave an excellent illustrated lecture on "Differential Diagnosis of Sub Sternal Pain."

The slides illustrating his cases were particularly instructive.

Followning Dr. Sloan two motion pictures were shown:

1. Hydrocele.
2. Anatomy of the Abdominal wall.

The meeting adjourned to be called again at the order of the President.

A. R. Bogur, M. D., Secretary.

STEPHENSON COUNTY

At the annual meeting of the Stephenson County Medical Society held at noon today at the Hotel Freeport, officers for the ensuing year were elected, and Dr. H. J. Stickle, Freeport, was chosen to lead the organization for 1932.

Dr. W. P. Peck, Freeport, was elected vice-president, and Dr. K. B. Rieger, Freeport, was re-elected to the office as secretary and treasurer. Dr. C. L. Best, Freeport, and Dr. L. M. Thompson, Lena, were named as members of the board of censors. Dr. C. J. Leavy, retiring president, was named as delegate to the state convention to be held at Springfield, in June, with Dr. E. A. Diestelmeier, chosen as alternate.

Dr. Stickle, who resides at 1043 West Lincoln boulevard, has been practicing for the past eleven years, having come to Freeport following the termination of his course in a medical school. He graduated from Hahneman Medical College at Chicago, finishing his internship at Boston, and completing his course in surgery in that city.

Resolutions of condolence were adopted for Rr. G. M. Henbest, recently deceased, and will be forwarded to his widow, expressing the deep regret of the members of the society at his passing.

The following resolution was presented at the meeting of the society extending sympathy to Dr. Karl F. Snyder:

"Whereas, A beloved member of this society, Dr. Karl F. Snyder, has sustained serious and painful injuries resulting from an automobile accident.

"Be It Resolved, That we as members of the society extend to him our deepest sympathy and trust that his illness may be of brief duration followed by a complete recovery.

"Be It Further Resolved, That the contents of this resolution be recorded in the minutes of this meeting and a copy of same sent to Dr. Snyder.

"(Signed)

"W. B. Peck,
"W. L. Karcher,
"J. Sheldon Clark,
"C. L. Best,
"C. J. Leavy."

Marriages

Nicholas Dykstra, Jr., Chicago, to Miss Ilma Takola of Hibbing, Minn., Oct. 20, 1931.

Oliver E. Ehrhardt, Springfield, Ill., to Miss Helen Stout of Brinkley, Tenn., January 7.

Jack D. Kirshbaum, Chicago, to Miss Florence Leon Rosen of Montreal, Que., Canada, Dec. 27, 1931.

Victor Levine, Chicago, to Miss Wilhelmena A. Warner of Summitville, Ind., Dec. 18, 1931.

John C. Vermeren, Chicago, to Miss Rose Margaret Gill of Sun Prairie, Wis., Oct. 28, 1931.

Harry C. Hill to Mrs. Angela Lewis, both of Streator, Ill., Dec. 30, 1931.

Personals

Dr. Charles E. Humiston, Chicago, addressed the Elgin Physicians' Club and the Elgin Kiwanis Club, January 26, on "Science and Superstition."

The La Salle County Medical Society was addressed, January 7, by Drs. Archibald L. Hoyne and Emil D. W. Hauser, Chicago, on poliomyelitis and low back pain, respectively.

Dr. Maximilian Kern, Chicago, addressed the Rock Island County Medical Society, January 12, on "Non-surgical Types of Goiter."

Dr. Marion L. Klinefelter, St. Louis, addressed the Madison County Medical Society, January 8, on fractures.

Dr. William L. Benedict, Rochester, Minn., talked on "Orbital Tumors" before the Chicago Ophthalmological Society, January 18.

The Chicago Gynecological Society was addressed, January 15, by Drs. Maurice A. Schnitker, Paul C. Hodges and Frank E. Whitacre on "X-Ray Evidence of Fetal Death."

The Chicago Neurological Society was addressed, January 21, among others, by Dr. Eric Oldberg on "Indications for Chordotomy."

At the January 5 meeting the Peoria City Medical Society, Drs. Wilber E. Post and William A. Hoffman, Chicago, discussed the newer phases in studies of nephritis.

Major Lamphear W. Webb, Jr., Chicago, presented "Medical Aspects of Chemical Warfare and Demonstration of Gas Apparatus" before the Peoria City Medical Society, January 12.

At the meeting of the Morgan County Medical

Society, January 14, Drs. George L. Drennan spoke on "Reasons for Pelvic Measurements" and David W. Reid, "A Summary of Thirty Years' Obstetrical Work in Jacksonville."

Dr. William W. Duke, Kansas City, Mo., held a diagnostic clinic for cases of allergy before the McLean Medical Society, January 12, and spoke on "The Dawn of a New Specialty in Medicine."

At a joint meeting of the Fulton, Schuyler and McDonough county medical societies, January 28, Dr. Walter H. Nadler, Chicago, spoke on diabetes.

Dr. Hugo R. Rony, Chicago, addressed a joint meeting of the Will-Grundy County Medical Society and the woman's auxiliary in Joliet, January 13, on "Obesity and Leanness."

Dr. Grandison D. Royston, St. Louis, addressed the St. Clair County Medical Society, January 7, on "Use and Abuse of Anesthetics and Pituitrin in Pregnancy."

Dr. Paul L. Schroeder, among others, spoke on "The Work of the Division of the Criminologist and the Institute for Juvenile Research," January 14, before the Chicago Academy of Criminology.

The Chicago Council of Medical Women was addressed, January 8, by Dr. Carroll C. L. Birch on "Hemophilia"; Rosalie M. Parr, "A Discussion of Rare Element Salts as Erythropoietic Agents," and Dr. Evelina W. Ehrmann, "Anemia Neonatorum."

Dr. George J. Rukstinat, among others, addressed the Chicago Pathological Society, January 11, on "Hemorrhage into the Stroma of Both Ovaries—A Sequel of Mitral Stenosis"; Dr. Hamilton R. and Dora Fishback spoke on "Phosphorus Partition in Experimental Degeneration of Striated Muscle."

At the meeting of the Chicago Orthopedic Club, January 8, Drs. Joseph Miller and Edward L. Compere spoke on "Classification of Chronic Arthritis Based on Etiology and Pathology" and "Bone Cyst and Giant Cell Tumor—Their Relation to Infection," respectively.

Among others, Drs. Dallas B. Phemister and Lois Day addressed the Chicago Surgical Society, January 8, on "Calcium Carbonate Gallstones," and Dr. Carl A. Hedblom, "Obliteration of Large Chronic Empyema Cavities by Combined Conservative and Radical Measures."

At the meeting of the Chicago Society of Allergy, January 18, the speakers were Drs. Meyer R. Lichtenstein on "Potency of Ragweed Extracts"; Leon Unger, "Perennial vs. Preseasonal Hay Fever Treatment," and Samuel M. Feinberg, "A Scheme for Evaluation of Hay Fever Results."

The Society of Medical History of Chicago was addressed, January 14, by Drs. Lloyd L. Arnold on "Pettenkofer"; Milton G. Bohrod, Decatur, Ill., and William F. Petersen, "Medical Notes on the Arthacastra of Kautilya." Dr. Bohrod also spok on "Genealogy of Medical Thought," and Dr. Petersen on "Count Struensee."

News Notes

—Dr. Edward J. Stieglitz, Chicago, addressed the Will-Grundy County Medical Society, January 20, on "Certain Aspects of Arterial Hypertension." Dr. Géza de Takats, Chicago, addressed the society recently on "The Value of Ambulatory Vein Ligations in the Treatment of Varicose Veins."

—The Chicago Society of Internal Medicine was addressed, January 25, by Drs. Willard O. Thompson on "Cerebrospinal Fluid in Myxedema and in Exophthalmic Goiter"; Edmund Andrews, "Chemical Mechanism of Gallstone Formation," and William S. Boikan, "Myocarditis Perniciosa."

—Philip B. Hadley, Ph.D., associate professor of bacteriology, University of Michigan Medical School, Ann Arbor, will give the eighth Ludvig Hektoen lecture of the Frank Billings Foundation at the City Club, March 25, on "New Trends in Medical Bacteriology and Immunology."

—The Chicago Urological Society was addressed, January 27, by Drs. Irvin S. Koll on "Symptomatic Nephroptosis Requiring Surgical Treatment"; Budd C. Corbus, "Newer Ideas in Immunology," and Charles M. McKenna and Eric Oldberg, "Bilateral Chordotomy for Relief of Pain in Carcinoma of the Bladder."

—"Therapeutics in Private Sanatoria for Mental Cases" was the general topic for discussion at the meeting of the Illinois Society for Mental Hygiene, Chicago, January 29; the speakers were Drs. John M. Grimes, Chicago, Albert H. Dollear, Jacksonville, Henry J. Gahagan, Chicago, James M. Robbins, Kenilworth, and Greorge W. Mitchell, Peoria.

—At the first quarterly meeting of the Illinois Radiological Society in Bloomington, January 24, Drs. Edward L. Jenkinson spoke on "X-Ray Treatment of Thyroid Disease"; Robert A. Arens, "Primary Gallbladder Films Versus Cholecystography," and Isador S. Trostler, Chicago, "Historical Data Regarding the Roentgen Rays."

—At a joint meeting of the Chicago Roentgen Society and the Chicago Society of Industrial Medicine and Surgery, January 13, the speakers were Drs. Samuel C. Plummer on "Fractures of the Spine"; Paul G. Dick, "Anomalies of the Spine," and Maximilian J. Hubeny, "Hypertrophic Spondylitis Accompanied by Radiculitis."

—A symposium on vivisection was held, January 21, under the auspices of the public health and legislative committees of the Chicago Woman's Aid; the speakers and their subjects were Drs. Margaret M. H. Kunde, "The War Against Human Pain and Suffering"; Andrew C. Ivy, "Biological Explorations in the Land of Life," and Morris Fishbein, "The Anti-Type of Mind."

—Dr. Nathaniel Allison has resigned as professor of orthopedic surgery in the department of surgery at the University of Chicago, on account of ill health. Dr. Allison, since his arrival at the university in April, 1930, has organized the division of orthopedic surgery. He has been appointed a nonresident professor and consulting surgeon in the department.

—A tumor clinic has been organized at the University of Chicago to afford a close cooperation between the departments of surgery and gynecology and the division of roentgenology, in the treatment of neoplastic disease and such other cases as require radiation therapy, exclusive of all dermatologic conditions. It consists of two divisions, surgical and gynecologic. The services of the tumor clinic are optional to staff members of the University of Chicago Clinics. Its organization is not intended to curtail the activities of any physician in the treatment of cancer. No patient will be admitted directly to the tumor clinic from the admitting office unless referred expressly to it by an outside physician. One of the principal functions of the clinic will be the follow up of all cases.

—Heads of National Fraternities desiring to have meetings in Springfield during the annual meeting of Illinois State Medical Society are requested to notify Dr. C. B. Stuart, Ridgely Farmers Bank Building, Chairman of Fraternity and Alumni Commitee, that arrangements may be made for the meetings.

—A special meeting of the Chicago Laryngological and Otological Society and the Chicago Tuberculosis Society, preceded by a dinner in honor of Doctor Chevalier Jackson, was held at La Salle hotel, January 4. The following program was given:

Call to Order—Howard Ballenger.

Greetings from the Chicago Medical Society—John Harger.

An Appreciation of the Work of Chevalier Jackson

In Diseases of Lungs—Ethan Allen Gray.
In Peroral Endoscopy—Joseph C. Beck.
In Medical Literature with the Brush and Pen—Morris Fishbein.
As a Fellow of the American Medical Association—Edward H. Cary (Dallas).
As a Doctor of Medicine—Frank Billings.

Suppurative Disease of the Lung Following Operations Involving the Upper Air Passages—Chevalier Jackson.

Discussion—Carl Hedblom and Edwin McGinnis.

—On Thursday, March 3, Sangamon County Medical Society will hold an all day Clinic with the following program:

8-9 A. M.—Veneral Disease Clinic.
9-12 A. M.—Surgical Clinic.
Noon—Luncheon at St. John's Hospital.
1-3 P. M.—Ward Walks.
3-6 P. M.—Medical Clinics.
6 P. M.—Dinner at Leland Hotel.
8 P. M.—An outside speaker.

Clinics and Ward Walks will be at St. John's Hospital, Springfield, and will be conducted by their own clinicians.

—Dr. Otto L. Schmidt addressed the Medical History Club of the University of Illinois College of Medicine on January 6—subject—"The Place of Medical Museums in Medical Education."

—On February 17, Dr. E. P. Lyon, Dean of the Medical School of the University of Minnesota, will address the Club on "The Relation of the Professional Nurse to Medical Practice."

Deaths

ANSON T. ABELL, Mattoon, Ill.; Hospital College of Medicine, Louisville, 1895; a member of Coles-Cumberland Medical Society for 13 years; aged 74; died, January 9, of arteriosclerosis.

FRANK PIERCE BECK, Oakland, Ill.; University of Illinois College of Medicine, 1901; a member of Coles-Cumberland Medical Society since 1906; aged 62; died, January 21.

AXEL FERDINAND BENSON, Chicago; University of Illinois College of Medicine, 1910; a member of Illinois State Medical Society; aged 58; died, January 2, of chronic nephritis.

FRED HARRISON BRINES, Albion, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1911; past president of the Hamilton County Medical Society; aged 51; died, December 9, 1931, of pulmonary tuberculosis.

PETER CHRISTIAN CLEMENSEN, Chicago; Northwestern University Medical School, Chicago, 1902; a Fellow, A. M. A.; formerly member of the school board; aged 58; on the staff of the Woodlawn Hospital, where he died, January 5, of nephritis and urinary sepsis.

JAMES E. COWAN, Galesburg, Ill.; Rush Medical College, Chicago, 1874; aged 82; died, Nov. 10, 1931, in the Galesburg Cottage Hospital.

DUDLEY WATSON DAY, Rockford, Ill.; Rush Medical College, 1907; on staff of Rockford Hospital and chief of staff of Rockford Children's Home for several years; head of department of hygiene and health of the public schools 1910-1921; member of Illinois State Medical Society several years; aged 49, died, January 15, of myocarditis.

JOHN J. DRISCOLL, Chicago; Rush Medical College, Chicago, 1891; member of the Illinois State Medical Society; aged 73; died, January 5, of cerebral hemorrhage and arteriosclerosis.

WILLIAM HENRY EVANS, Murphysboro, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1914; a Fellow, A. M. A.; aged 43; died, December 28, 1931, of diabetes mellitus and nephritis.

WILLIAM ELLIS FAWCETT, Bushnell, Ill.; Western Pennsylvania Medical College, Pittsburgh, 1898; a Fellow, A. M. A.; member of the Michigan State Medical Society; medical director and superintendent of the Elmgrove Sanitarium; formerly superintendent of the Pureair (Wis.) Sanatorium; aged 55; died, December 12, 1931.

THOMAS LEWIS GILMER, Chicago; Quincy (Ill.) College of Medicine, 1885; a Fellow, A. M. A.; emeritus dean and professor of oral surgery, Northwestern University Dental School; member of the American College of Surgeons; oral surgeon to St. Luke's Hospital; aged 82; died, December 28, 1931, in St. Vincent's Hospital, Los Angeles, of cerebral hemorrhage.

FREDERICK HASSE, Chicago; Bennett College of Eclectic Medicine and Surgeon, Chicago, 1883; aged 87; died, December 29, 1931, in the German Deaconess Hospital, of myocarditis, following an operation for carcinoma of the prostate.

GEORGE MURRAY HENBEST, Freeport, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; a Fellow, A. M. A.; aged 63; died, December 1, 1931, of carcinoma of the bladder.

FRED DRURY HOLLENBECK, Chicago; Rush Medical College, Chicago, 1895; a Fellow, A. M. A.; on the staff of the American Hospital; aged 68; died, September 25, of myocarditis.

DANIEL J. MACISAAC, Chicago; Chicago Medical College, 1920; aged 42; died, January 1, at St. Luke's Hospital, from injuries due to being struck by an automobile.

FRANCIS MARION MCNAIR, Sugar Grove, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1893; served during the World War; aged 64; died, December 11, 1931, in the Edward Hines, Jr., Hospital, Hines, of heart disease.

ARTHUR LAURENCE MUREN, Belleville, Ill.; National University of Arts and Sciences Medical Department, St. Louis, 1924; member of the Illinois Medical Society; served during the World War; aged 42; died, December 26, 1931, of a self-inflicted bullet wound.

EMMANUEL CROSS NOLAN, Mt. Pulaski, Ill.; Rush Medical College, 1878; retired several years on account of poor health; aged 78; died, January 10.

MARY EUGENIE POGUE, Wheaton, Ill.; Hahnemann Medical College and Hospital, Chicago, 1900; a Fellow, A. M. A.; member of the American Psychiatric Association and the Central Neuropsychiatric Association; medical superintendent and owner of the Mary E. Pogue School and Sanitarium; aged 61; died, January 3, in the Passavant Hospital, Chicago, of coronary thrombosis.

FREMAN J. SCOTT, Rock Falls, Ill.; Hahnemann Medical College and Hospital, 1888; health officer of Rock Falls; aged 71; died, January 5, of myocarditis.

JOHN W. SCOTT, Springfield, Ill.; Northwestern University Medical School, 1876; a former secretary of Illinois State Board of Health, active in politics and fraternal organizations; aged 76; died, December 12.

CELDO BENNO SEMERAK, Chicago; Rush Medical College, Chicago, 1916; a Fellow, A. M. A.; instructor of pathology at his alma mater; aged 56; died, December 15, 1931, of pneumonia.

ROBERT FRANKLIN STEPHENS, Toledo, Ill.; Hospital College of Medicine, Louisville, Ky., 1897; aged 64; died, December 16, 1931, of acute dilatation of the heart and pulmonary edema.

GEORGE H. WEBER, Peoria, Ill.; Louisville (Ky.) Medical College, 1900; a Fellow, A. M. A.; past president of the Peoria County Medical Society; on the staffs of the Methodist Hospital, St. Francis' Hospital and the Proctor Hospital; aged 55; died, December 31, 1931, of angina pectoris.

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